Electronically Filed
Docket: 21-CRB-0001-PR (2023-2027)
Filing Date: 10/20/2021 04:50:10 PM EDT

Before the
COPYRIGHT ROYALTY BOARD
LIBRARY OF CONGRESS
Washington, D.C.

In the Matter of:	Docket No. 21–CRB–0001–PR (2023–2027)
DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (Phonorecords IV)	

WRITTEN DIRECT STATEMENT OF COPYRIGHT OWNERS

VOLUME V.C

PUBLIC VERSION

PUBLIC VERSION

Before the

COPYRIGHT ROYALTY BOARD

LIBRARY OF CONGRESS

Washington, D.C.

In the Matter of:

DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)

Docket No. 16–CRB–0003–PR (2018– 2022)

EXPERT REPORT

OF

JOSHUA GANS

ON BEHALF OF
COPYRIGHT OWNERS

October 31, 2016

TABLE OF CONTENTS

I. ASSIGNMENT AND QUALIFICATIONS

1. I have been retained by counsel for the National Music Publishers' Association (NMPA) and Nashville Songwriters Association International (NSAI) (together, the "Copyright Owners") to evaluate appropriate royalty rates and terms for making and distributing phonorecords in the United States for the period 2018-2022 using economic principles. As part of my analysis, I was asked to examine the extent to which regulatory access pricing methods provide helpful models for estimating and implementing mechanical royalties and, applying those models, opine on the economic reasonableness of the Copyright Owners' rate proposal.

2. The materials that relied upon in developing my analysis and opinions are listed in Appendix A.

A. QUALIFICATIONS

3. I am a Professor of Strategic Management and holder of the Jeffrey S. Skoll Chair of Technical Innovation and Entrepreneurship at the Rotman School of Management, University of Toronto. I am a Research Associate, National Bureau for Economic Research and a Research Fellow, Center for Digital Business, Sloan School of Management, Massachusetts Institute of Technology. I am also the Chief Economist at the University of Toronto's Creative Destruction Lab, a highly successful incubator for technology-based business ventures. I have previously served as a Professor of Management (Information Economics) at the Melbourne School of Business, University of Melbourne, and as a visiting researcher at Microsoft Research (New England).

4. I have published extensively on the nature of technological competition and innovation, industrial organization, and regulatory economics. My work frequently appears in the leading economics journals, including the American Economic Review, the Journal of Economic Perspectives, Journal of Public Economics, and the Journal of Law and Economics. In addition, I have authored several books and write regularly on high-tech issues on the blog Digitopoly.

5. In my book titled "The Disruption Dilemma," which concerns innovation and competition by looking at companies that have proven resilient and those that have fallen, I explain why some companies have successfully managed disruption and why others have not.

6. I am an Academic Advisor to The Brattle Group, an economic consulting firm and have worked with several other consulting firms, including London Economics, Frontier Economics, Charles River Associates and Analysis Group. I have previously been retained by the Federal Trade Commission and the Australian Competition and Consumer Commission to provide expert testimony on market power, copyright licensing, and telecommunications network competition. My consulting experience covers energy (gas and electricity markets), telecommunications, financial services and banking, intellectual property licenses, pharmaceuticals, and rail transport.

7. I have provided expert testimony in intellectual property disputes and copyright matters. In addition, I have provided expert advice on regulatory pricing issues including access pricing and advised Microsoft in a number of patent royalty and antitrust matters. The full range of cases on which I have provided expert advice and testimony are listed in my CV (attached as Appendix B).

II. SUMMARY OF OPINIONS

8. The existing rate structure and the level of statutory rates for interactive streaming and limited download services[1] have not performed well when measured against a free market standard favored by economists for evaluating regulated prices. I analyze the relevance of economic principles from regulatory access pricing rules. I analyze what mechanical royalty rates would be in a free market without compulsory licensing, based on a Shapley value approach (described below), and I estimate rates using assumptions from benchmarks for sound recordings. The results of my analysis support the reasonableness of the Copyright Owners' proposed rates.

9. More specific findings of my analysis include:

- The compulsory licensing of musical works has depressed mechanical royalty rates in comparison to the non-compulsory licensing of sound recordings.
- In the context of "reasonable" royalty rates to be set in this proceeding, a hypothetical unconstrained market for mechanical licenses is an appropriate analytical guide.
- Economic principles that underlie the Efficient Component Pricing Rule (ECPR) regulatory pricing rules used in other markets are useful guides in setting reasonable rates. These principles are also designed to mimic the outcome that would result in a hypothetical free market. These principles result in statutory rates that allow for recovery of opportunity costs and do not favor particular business models over others.
- The opportunity cost principle also implies that if rates are set appropriately, rightsholders should not be harmed by compulsory licensing.
- Prevailing rates are too low to compensate for opportunity costs overall.
- Sound recording licenses provide a benchmark for estimating a reasonable rate for musical works that bakes-in the opportunity cost.

---

[1] Throughout this report, for convenience I will use the term interactive streaming to refer to services that provide interactive streaming and/or limited downloads, unless explicitly stated otherwise.

- The Shapley value approach can be applied to the interactive streaming business and used to assess how the proposed mechanical rate would compare to rates that would prevail absent compulsory licensing.
- The rates proposed by the Copyright Owners are conservative relative to estimates derived using the Shapley value approach and benchmarks of outcomes in an unconstrained market.

III. ROYALTIES FOR MUSICAL WORKS HAVE BEEN HISTORICALLY DEPRESSED THROUGH COMPULSORY LICENSING

10. The U.S. Copyright Office acknowledges that royalty rates for musical works have been historically depressed by compulsory licensing and presents significant evidence to that effect in its 2015 Music Marketplace Report.[2] Although licensors and licensees of composition rights can negotiate outside of the compulsory system, the statutory rate acts as a ceiling to those negotiations.[3] Through the constraint of negotiated outcomes, perceptions regarding the market value of composition rights have been negatively influenced. In turn, those skewed perceptions have influenced statutory rates. This unvirtuous cycle has worked to historically depress royalty rates for musical works.

A. THE HISTORICAL CONTEXT FOR COMPULSORY LICENSING OF MUSICAL WORKS

11. Mechanical royalties were established in the 1909 Copyright Act, which granted songwriters the exclusive right to reproduce and distribute phonorecords. However, the

---

[2] "There is substantial evidence to support the view that government-regulated licensing processes imposed on publishers and songwriters have resulted in depressed rates, at least in comparison to noncompulsory rates for the same uses on the sound recording side. Setting aside efficiency concerns, the Office does not see a principled reason why sound recording owners are permitted to negotiate interactive streaming rates directly while musical work owners are not." United States Copyright Office, "Copyright and the Music Marketplace, A Report of the Register of Copyrights," February 2015, at 159 (hereinafter, "CMM").

[3] "While copyright owners and users are free to negotiate voluntary licenses that depart from the statutory rates and terms, in practical effect the CRB-set rate acts as a ceiling for what the owner may charge." CMM, at 29.

exclusivity of those rights would have meant, by definition, that parties wishing to use musical works could be excluded from doing so at the rightsholders' discretion, triggering fears of anticompetitive behavior by rightsholders. For example, some lawmakers believed that manufacturers of player pianos would obtain exclusive deals with rights owners so that certain compositions could only be purchased in conjunction with a certain brand of player piano. This would allow manufacturers of those brands to establish monopoly power over the downstream market. To prevent such a possibility, lawmakers established a compulsory licensing system, whereby any manufacturer of player piano rolls could use protected musical works upon paying the statutory rate of $0.02 and serving notice to the copyright owner.[4]

12. It is worth noting that the anticompetitive behavior used to justify compulsory licensing existed in theory only. No manufacturer of player pianos had ever gained monopoly power by securing exclusive access to musical works. Moreover, those fears were not manifest when Congress passed the Sound Recording Act of 1971,[5] which granted copyright holders the exclusive right to the reproduction and sale of sound recordings, as those rights were not subjected to compulsory licensing.[6] Thus, in order to play the musical works subject to

---

[4] Skyla Mitchell, *Reforming Section 115: Escape from the Byzantine World of Mechanical Licensing*, Cardozo Arts & Entertainment Law Journal 24(3) (March 2007), at 1239,.

[5] A limited copyright in sound recordings for the reproduction and sale of such recordings was created by the Sound Recording Act of 1971. *See* House Report 92-487, Committee of the Judiciary, September 22, 1971, at 2, accessed October 18, 2016, http://copyright.gov/reports/performance-rights-sound-recordings.pdf. The 1978 Act merely clarified and limited the scope of that right (excluding performance) and directed the Register of Copyrights to prepare a report on whether performance should also be added to the right under a compulsory license. See House Report 94-1476, Committee of the Judiciary, September 3, 1976, at 106, accessed October 21, 2016, http://www.copyright.gov/history/law/clrev_94-1476.pdf.

[6] The relevant House Report does not mention that any anticompetitive or antitrust arguments were presented in support of compulsory licensing, but notes that the idea was rejected on other grounds. House Report 92-487, Committee of the Judiciary, September 22, 1971 at 4.

compulsory licensing, interactive streaming services must negotiate for a license for the sound recording of that work. The prediction of anticompetitive theories that gave rise to compulsory licensing has not been borne out to date in markets with similar characteristics.

13. Competition between streaming services in the downstream market is vigorous. There are many competing providers, (see Table 1) and some artists are withholding their sound recording rights in order to put upward pressure on compensation.[7] The orderly functioning of the interactive streaming-sound recording market,[8] outside the compulsory licensing regime of the Copyright Act provides evidence that notional anticompetitive concerns underlying the Copyright Act[9] are not manifest in licensing with interactive streaming services. The asymmetric treatment of publishers that are subject to compulsory licensing while labels are outside the compulsory licensing regime for interactive streaming rights is not economically justified.[10]

---

7 "A growing number of high-profile songwriter/artists—including Taylor Swift and Thom Yorke—are leveraging their sound recording rights to remove their music from Spotify, principally out of concern that Spotify's free ad-supported tier of service does not fairly compensate them for their songs." CCM, at 75. *See also,* Ben Sisario, "Adele is Said to Reject Streaming for '25'," *The New York Times*, November 19, 2015, accessed October 24, 2016, http://www.nytimes.com/2015/11/20/business/media/adele-music-album-25.html; Ben Sisario, "Chief Defends Spotify After Snub by Taylor Swift," *The New York Times*, November 11, 2014, accessed October 24, 2016, http://www.nytimes.com/2014/11/12/business/media/taylor-swifts-stand-on-royalties-draws-a-rebuttal-from-spotify.html.

8 The private negotiation of licenses between labels and interactive streaming services has not been inhibited, or resulted in monopolization, by the absence of compulsory licensing, but has resulted in different terms being agreed. "A streaming service that does not fall under the section 112 and 114 licenses—i.e., an interactive service—must negotiate a license with a record company in order to use the label's sound recordings. Since direct licenses are agreed upon at the discretion of the copyright owner and the potential licensee, the license terms can be vastly different from those that apply under the statutory regime." CMM, at 52.

9 The U.S. Copyright Office identifies two prevalent antitrust concerns raised by participants in the U.S. music marketplace arising from the risk of the undue influence of monopoly power. "The first type of 'monopoly' refers to alleged anticompetitive practices on the part of the PROs. […] The second type of monopoly […] [is] the limited 'monopoly' in an individual work that is conferred by virtue of the exclusive rights granted under the Copyright Act. Even though it is not a product of collective activity, these exclusive rights probably play no less of a significant role in debates about music licensing." CMM, at 146.

10 "In keeping with the guiding philosophy that government should aspire to treat like uses of music alike, the [U.S. Copyright] Office believes this should change, at least in the digital realm. That is, where sound

Table 1: Interactive Music Streaming Service Market (Selected Companies)

		Date of Entry
	Major Services	
[1]	Rhapsody (rebranded Napster)	December 2001
[2]	Slacker	May 2011
[3]	Rdio	August 2010
[4]	Spotify	July 2011
[5]	Google Play	May 2013
[6]	Tidal	October 2014
[7]	Amazon (Prime)	June 2014
[8]	Microsoft (formerly Xbox Music)	October 2012
[9]	Apple Music	June 2015
[10]	Soundcloud (Go)	March 2016
[11]	Deezer	July 2016
	Recent Notable Entrants	
[12]	Amazon (Unlimited)	October 2016
[13]	iHeartMedia	January 2017
[14]	Pandora	TBD
[15]	Playster	TBD

Sources and Notes:

[1]: Napster Team, "Rhapsody and Napster to Wind Down Partnership with the Echo Nest," *Napster*, March 21, 2014, accessed October 18, 2016, http://blog.napster.com/us/2014/03/21/rhapsody-and-napster-to-wind-down-partnership-with-the-echo-nest/.

[2]: "Slacker Launches On-Demand Music Service," *Los Angeles Times*, May 17, 2011, accessed October 25, 2016. http://latimesblogs.latimes.com/music_blog/2011/05/slacker-launches-on-demand-music-service.html.

[3]: Robert Andrews, "In Unlimited Music Race, Rdio Has Beaten Spotify to US Launch," *The Guardian*, August 4, 2010, accessed October 18, 2016, https://www.theguardian.com/ technology /pda/2010/aug/04/rdio-spotify-music-us.

[4]: Daniel Ek, "Hello America. Spotify Here," Spotify News, July 7, 2014, accessed October 18, 2016, https://news.spotify.com/us/2011/07/14/hello-america-spotify-here/

[5]: Josh Constine, "Google Launches 'Google Play Music All Access' On Demand $9.99 A Month Subscription Service," *TechCrunch*, May 15, 2013, accessed October 25, 2016. https://techcrunch.com/2013/05/15/google-play-music-all-access/

[6]: Stuart Dredge, "Tidal Takes On Spotify with Lossless-Quality Streaming Music," *The Guardian*, October 28, 2014, accessed October 18, 2016, https://www.theguardian.com/ technology/2014/oct/28/tidal-lossless-streaming-music-spotify

[7]: Ed Christman, "Amazon Launches Prime Music Streaming Service, Minus UMG," *Billboard*, June 12, 2014, accessed October 18, 2016,

recording owners have the ability to negotiate digital rates in the open market, so should owners of musical works." CMM, at 136.

http://www.billboard.com/biz/articles/ news/digital-and-mobile/6114217/amazon-launches-prime-music-streaming-service-minus-umg

[8]: "Introducing Xbox Music: The Ultimate All-in-One Music Service Featuring Free Streaming on Windows 8 and Windows RT Tablets and PCs," Microsoft, October 15, 2012, accessed October 25, 2016. https://news.microsoft.com/2012/ 10/15/introducing-xbox-music-the-ultimate-all-in-one-music-service-featuring-free-streaming-on-windows-8-and-windows-rt-tablets-and-pcs/#sm.000jd442 w15kwen6xyh194pk3tjgo.

[9]: "Introducing Apple Music—All The Ways You Love Music. All in One Place," Apple, June 30, 2016, accessed October 25, 2016. https://www.apple.com/pr/library/2015/06/08Introducing-Apple-Music-All-The-Ways-You-Love-Music-All-in-One-Place-.html.

[10]: Andrew Flanagan, "SoundCloud Launches Its Subscription Service, Go," *Billboard*, March 29, 2016, accessed October 18, 2016, http://www.billboard.com/articles/business/7311612/soundcloud-go-subscription-service-launches

[11]: Deezer had already had a limited presence in the U.S as early as October 2014 through Sonos and Bose speakers. See Kobalt data. Andrew Flanagan and Rebecca Sun, "Deezer Launches, After a Fashion, in the U.S.," *Billboard*, July 19, 2016, accessed October 18, 2016, http://www.billboard.com/articles/business/7445723/deezer-launches-us.

[12]-[14]: Kim Kyung-Hoon, "Amazon and Pandora Set to Launch New Music Streaming Services, NY Times," *Reuters*, September 11, 2016, accessed October 18, 2016, http://www.reuters.com/article/us-amazon-com-music-idUSKCN11I023.

[13]: "iHeartMedia Revolutionizes Live Radio and Introduces On Demand With New Services 'iHeartRadioPlus' And 'iHeartRadio All Access,'" iHeartMedia, September 23, 2016, accessed October 18, 2016, http://www.iheartmedia.com/Pages/iHeartMedia-Revolutionizes-Live-Radio-And-Introduces--On-Demand-With-New-Services--%E2%80%98iHeartRadio-Plus%E2%80%99-And-%E2%80%98iHeartRadio-All-.aspx.

[15]: Although Playster has been around since December 2015, it unveiled a partnership in August 2016 with 7digital to launch its revamped music platform. "Stream Daily: New Subscription Service Playster Launches Globally," Playster, December 14, 2015, accessed October 18, 2016, https://blog.playster.com/news-posts/new-subscription-service-playster-launches-globally/.

1. Sound Recording Rights are Negotiated in Unconstrained Markets While Composition Rights Remain in a Compulsory World

14. It is easy to draw parallels between sound recording rights and musical works rights, especially in the context of the interactive streaming market. Both begin with an artist who creates content, and both end with that content being distributed to the public by way of a streaming service. In both cases, an enterprise stands between the artist and streaming service to facilitate transactions. Those enterprises (record companies and music publishers) are both compensated in the same way—through full or partial ownership of or the exclusive right to license the content. Moreover, the markets in which record companies and music publishers exist are very similar to one another—a handful of "major" companies (each with at least 15% of market share) and a large cohort of smaller,

"indie" companies. At the point where recorded content becomes available to the public, however, these two structures cease to be parallel and begin to converge. That is to say, sound recording rights and musical works rights for streaming are two sides of the same coin—one right cannot be delivered to listeners, or hold any value, absent the other right.

15. Despite the parallels and ultimate convergence of sound recording and musical works rights, one artificial yet very important distinction exists between the two. That is, sound recording royalty rates are freely negotiated between the parties, whereas musical works rights must be made available at the statutory rate.

2. Statutory Rates Guarantee Access to Musical Works but May be Set at Levels that Expropriate Value From Rightsholders or Discourage Innovation

16. Services benefit from being able to rely on a statutory royalty rate being available without negotiation. The statutory license shelters the services against exercise of market power by a copyright holder. A poorly structured rate can distort the market, either expropriating value from rightsholders or discouraging competition.

17. A statutory rate that was so high to be exclusionary would be equivalent to having no statutory rate. A rate that was too low would expropriate value from the rightsholders, but could also distort competition by encouraging inefficient services. But a reasonable rate would establish a ceiling for guaranteed access, below which services and publishers could negotiate if more efficient pricing arrangements existed that made both sides better off, for example for new services or business models.

B. RELATIVELY UNCONSTRAINED MARKET RATES FOR SOUND RECORDINGS AND COMPULSORY RATES FOR COMPOSITIONS CREATED A HISTORICAL AND ARTIFICIAL ANCHOR FOR RELATIVE VALUES

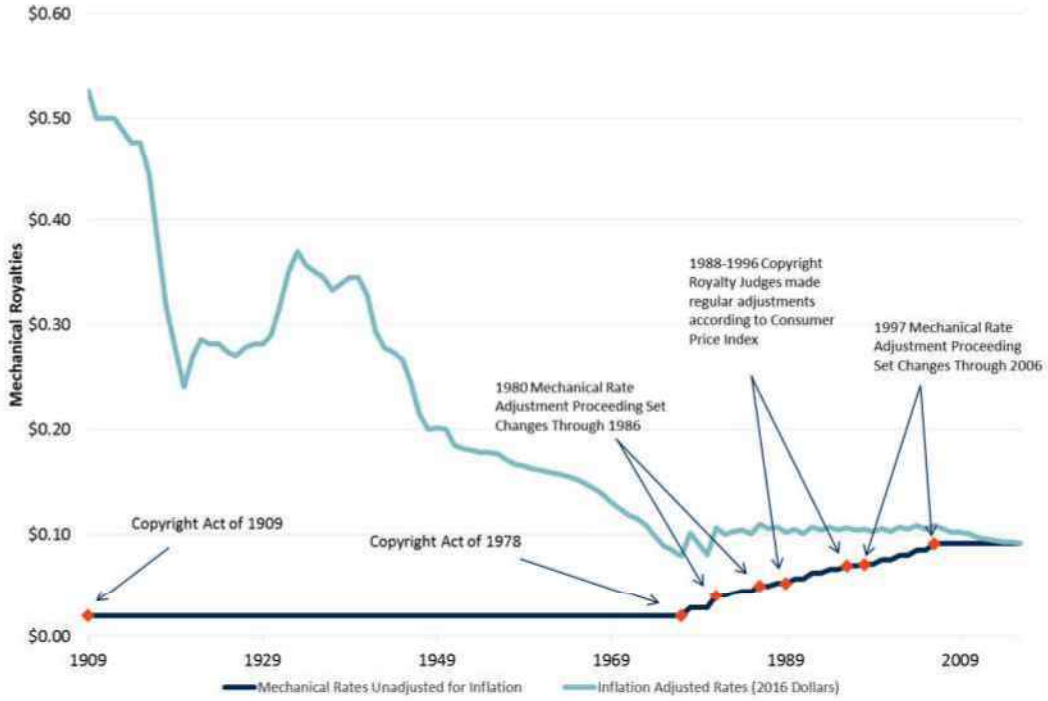
18. There is good reason to believe that the regulatory differences between sound recording and musical work rights have artificially and chronically depressed musical works royalty rates relative to sound recording royalty rates.

19. In the 107 years since compulsory licensing was instituted for musical works, those royalty payments have been disconnected from market forces. In fact, there was no change in the nominal mechanical rate ($0.02 per work) for 69 years, at which point (in 1978) it increased to $0.0275. The nominal rate went up to $0.04 in 1982 with another increase in 1996 putting it at $0.0695. In 2006, the nominal rate was increased to $0.091, which is where it stands now. Putting these figures in terms of 2016 dollars, the royalty rate was 49 cents per song in 1909, which eroded to 8 cents by 1978, at which point it was increased to 10 cents. Although several inflation-indexed adjustments kept the rate relatively constant between 1978 and 2006, no such adjustments have been made since 2006, causing the real rate to fall. The current rate is 9.1 cents per song—less than 20% of what it once was.[11] The full history of mechanical royalties is depicted in Figure 1.

---

[11] For the full history of mechanical royalties, *see, e.g.*, "What Are Mechanical Royalty Rates?" The Harry Fox Agency, 2015, accessed October 19, 2016, https://www.harryfox.com/license_music/what_mechanical_royalty_rates.html and cv2016.xls, downloaded from "Individual Year Conversion Factor Tables," Oregon State University, accessed October 19, 2016, http://liberalarts.oregonstate.edu/spp/polisci/faculty-staff/robert-sahr/inflation-conversion-factors-years-1774-estimated-2024-dollars-recent-years/individual-year-conversion-factor-table-0.

Figure 1: History of Mechanical Royalties 1909-2016



Sources: "What Are Mechanical Royalty Rates?" The Harry Fox Agency, 2015, accessed October 19, 2016, https://www.harryfox.com/license_music/what_mechanical_royalty_rates.html; cv2016.xls, downloaded from "Individual Year Conversion Factor Tables," Oregon State University, accessed October 19, 2016, http://liberalarts.oregonstate.edu/spp/polisci/faculty-staff/robert-sahr/inflation-conversion-factors-years-1774-estimated-2024-dollars-recent-years/individual-year-conversion-factor-table-0.

20. The anchoring effect of existing rates on future rates is seen in the many instances of renewal of existing rates or rate structures. Due to the rate's insulation from market forces over time, it was not clear what the actual market value of these rights might be. Jurists, lawmakers, licensees, and licensors have based their decisions about rates on their perception of value. However, the one consistent piece of information they have had to inform their perception is the rate itself. That is to say, decisions about rate changes have historically been based on perceptions of value, which have themselves been anchored to the existing rate. Compounding this stagnant cycle, all rate settlements between licensees and licensors have been negotiated in the shadow of the regulatory proceeding tasked with

setting those rates. Licensees have not had an incentive to agree to rates higher than they believed regulators would set in the absence of a settlement, and the rates set by regulators have likely been anchored by existing rates. Therefore, even though rightsholders may have understood that statutory rates were beneath market value, they could not have successfully negotiated for higher rates within the given context.

21. It is easy to see how this loop could cause rates to quickly diverge from any reflection of market value—that is, if such a reflection ever existed. Benchmarks which directly measure the market value of composition rights are difficult to construct, hence the historical bootstrapping of rate decisions to negotiated rates. This necessitates a scrupulous examination of any proposed benchmark and the application of economic principles as the primary method by which to determine the appropriate rate and rate structure.

22. Alternatively, sound recording rights, which are licensed at rates significantly higher than musical works rights, have been freely negotiated in the market. There may be a somewhat naive tendency to assume that differences between sound recording royalties and musical works royalties for reproduction rights reflect fundamental value differential. This is not an economically-sound conclusion given the market distortion created by the statutory mechanical royalty rate.

23. From one fundamental economic point of view, the value of sound recording rights and musical works rights for interactive streaming are equal. These two rights are perfect complements to one another. That is, one has no value without the other; a streaming service cannot transmit a track for which it owns the sound recording rights without first obtaining the musical works rights. The opposite situation is equally true. Both rights are necessary inputs. In the absence of compulsory licensing, either rightsholder could block a

track from being transmitted—they both have veto power. Moreover, neither contributes any value, without the simultaneous consent of the other.

C. RATES HAVE BEEN DEPRESSED BY A FAILURE TO ACCOUNT FOR THE HIGHER VALUE OF NEW CONSUMPTION PATTERNS

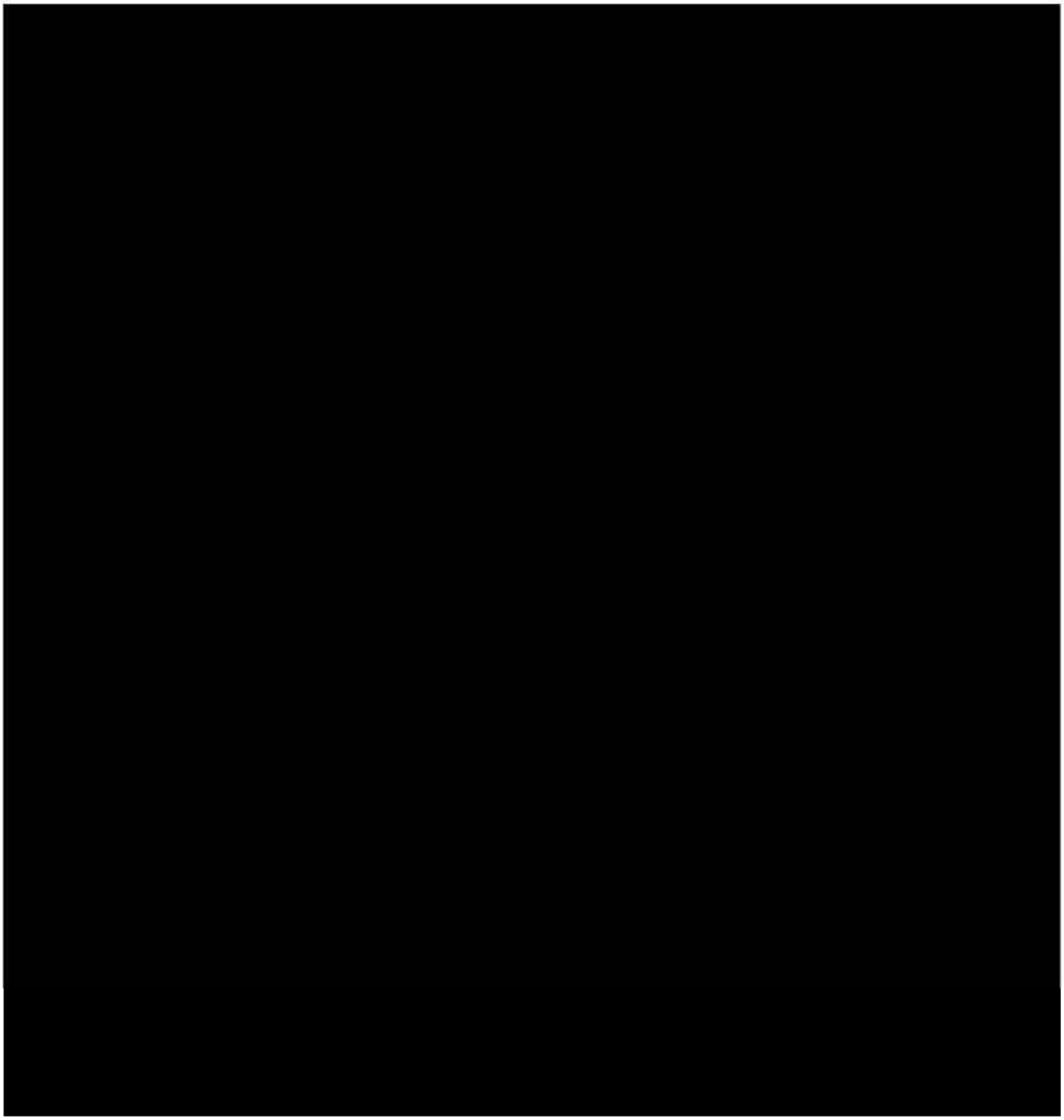
24. The mechanical royalties earned from album sales priced each track the same, in part because there was no practical way to compute the relative value of tracks. But now that downloads and streaming have unbundled the album, we can see how much more valuable the more popular tracks were than the others. One economic implication of this revealed value differential is that those tracks that are downloaded and streamed are typically of higher value than the average song on an album. The per-track mechanical rates should have been adjusted upwards for downloads to account for the change in the mix of tracks being sold. There are two contributing sources of this effect revealed by accounting for the higher popularity of tracks, relative to other tracks on the same albums. One of the unbundling effects is that some tracks are not consumed at all, the other is that the most popular tracks are consumed relatively more than others. I estimate that this effect would likely have resulted in about a doubling of mechanical rates (see Table 2).[12] The increase in average mechanicals is estimated using as examples hypothetical albums for which ten, eleven or twelve tracks are streamed. I assume that on average twenty percent of the tracks on these albums are not streamed.[13] The total mechanicals payable on these albums under

---

[12] To be precise, I estimate a 93% increase in mechanical royalties for tracks bundled on albums with 10 streamed tracks, a 98% increase in mechanical royalties for tracks bundled on albums with 11 streamed tracks, and a 101% increase in mechanical royalties for tracks bundled on albums with 12 streamed tracks.

[13] According to Spotify, "There are over 20 million songs on Spotify – 80% of these have been streamed at least once." Diego Planas Rego "We've turned 5 – here's our story so far!" Spotify News, October 7, 2013, accessed October 27, 2016, https://news.spotify.com/us/2013/10/07/the-spotify-story-so-far/.

the statutory rate is computed as 9.1 cents for each track (row [12]). The aggregate mechanicals are then reallocated based on streaming popularity (columns [2], [4], and [6]) to re-price each track (columns [3], [5], and [7]). The weighted average price of the tracks being consumed is then computed in row [13] taking into account the fact that the more valuable tracks are consumed more after unbundling.



[redacted]

25. The effect of this artificial depreciation in mechanical rates is continuing to push aggregate mechanical revenues lower. The shift from physical to digital sales not only reduced the number of unique tracks from albums being bought by each user on which a mechanical royalty was being paid, but also concentrated royalties that were paid within the set of top tracks. The shift to interactive streaming has further exacerbated the shift in royalty payments allocated per stream to those tracks that are streamed the most.

D. RATES NEGOTIATED OUTSIDE, OR PARTIALLY OUTSIDE, THE SHADOW OF COMPULSORY LICENSING ARE HIGHER THAN COMPULSORY RATES

26. Where musical works rightsholders have not been subject to compulsory licensing, they have achieved higher rates than compulsory rates, providing further evidence that the compulsory regime has historically depressed royalties for musical works rightsholders. I was advised by counsel that Dr. Eisenach provides a detailed analysis of market benchmarks, so I will confine myself to some brief observations.

27. It can be difficult to compare royalty rates for different licenses as to which rate is "higher" where different rights are at issue. However, we can find compelling evidence of private negotiations outside the shadow of compulsory licensing producing higher rates for sound recording rights licensed to interactive streaming services, which is relevant to musical works copyrights. Both rights are implicated with the same use, and, thus, the scope of the license is the same as between the musical works and sound recording copyrights. Since

sound recording licenses are not subject to compulsory licensing for interactive streaming, we can use them as a benchmark from which to assess whether a market value for musical works licenses would be higher than compulsory rates. We can compare relative ratios of sound recording royalty rates to musical works royalty rates in other settings to the ratio of rates for corresponding interactive streaming licenses to judge the effects of compulsory licensing. As an example, if Musical Work License A is not subject to compulsory licensing and has a royalty rate that is equal to 50% of the corresponding sound recording royalty rate for the same licensed use, and Musical Work License B, which is subject to compulsory licensing, has a rate equal to 25% of the corresponding sound recording royalty rate for the same licensed use, we can say that the compulsory Musical Work License B is at a lower royalty rate.

28. A useful example of the value of musical works copyrights can be found in the market for synchronization licenses,[14] a market in which both sound recording and musical work licenses are freely negotiated. In that market, the typical agreement provides the same compensation for both rightsholders.[15] This is explained because, as discussed above, each rightsholder has the same bargaining power relative to the licensee. The licensee must obtain both licenses for either one to provide value. While synchronization licenses may

---

[14] A synchronization license is a music license granted by the owner of a copyright for a musical work, allowing the licensee to synchronize the composition with visual media.

[15] "Synch licenses and master use licenses typically contain "most favored nation" provisions, which state that if a licensee acquires one of the two necessary rights [*i.e.*, the sound recording and the musical work rights] and subsequently agrees to pay the licensor of the other necessary right more than it paid the first, the licensee will be obligated to increase retroactively the fee paid to the first party." "Final Determination of Rates and Terms, In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding," Docket No. 2006-3 CRB DPRA, Copyright Royalty Board, January 26, 2009, at 34, accessed September 17, 2016, http://www.loc.gov/crb/proceedings/2006-3/dpra-public-final-rates-terms.pdf, citing Copyright Owners PFF ¶534.

invoke a different exclusive right than the mechanical right, both licenses involve the coordination by a licensee of licenses from both publishers and labels, and so involve the same economic forces that would determine the bargaining power for mechanical licenses in a hypothetical market for interactive streaming rights without compulsory licensing. Synchronization license rates that price publisher and label rights equally[16] provide evidence that the compulsory licensing exerts a downward pressure on royalty rates.

29. These types of transactions, where publisher royalties rise relative to corresponding royalties when the market is less constrained, exemplify how the historically-anchored regulatory system tends to insulate prices from market forces and ultimately depress them.

IV. ECONOMIC PRINCIPLES AND REGULATORY PRICING RULES FROM OTHER MARKETS ARE USEFUL GUIDES IN SETTING REASONABLE RATES

30. In this section, I examine economic principles and regulatory pricing rules developed and studied in other markets that are relevant in this setting. In particular, I look to the economic literature on regulatory pricing for essential facilities.

A. NORMALLY FUNCTIONING MARKETS ARE APPROPRIATE BENCHMARKS FOR REASONABLE RATES, IN THIS CASE A HYPOTHETICAL MARKET WITHOUT COMPULSORY LICENSING

31. Section 115(c)3(C) of the Copyright Act states that "[P]roceedings under chapter 8 shall determine reasonable rates and terms of royalty payments."[17] Economists generally look to

---

[16] *See, e.g.*, "Musical work and sound recording owners are generally paid equally—50/50—under individually negotiated synch licenses." CMM, at 56.

[17] Section 801(b)(1) calls for the Copyright Royalty Judges to "make determinations and adjustments of reasonable terms and rates of royalty payments […] calculated to achieve the [certain policy] objectives." The 801(b)(1) factors are: "(A) To maximize the availability of creative works to the public. (B) To afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions. (C) To reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological

normally functioning, unconstrained markets to assess prices or to set regulated rates. Indeed, "the single most widely accepted rule for the governance of the regulated industries is regulate them in such a way as to produce the same results as would be produced by effective competition, if it were feasible."[18] Thus, in any market that is not functioning as an effectively competitive market would, the so-called market failure that prevents it from functioning normally is the usual focus of regulatory intervention. Absent market failure, markets are presumptively superior to regulators in establishing prices that reflect fair value.

32. The term "reasonable rates" can be read as a relatively broad definition, but from an economic perspective would still be consistent with free market outcomes.[19] In this setting a free market would be a hypothetical market for mechanical rights, unconstrained by compulsory licensing, but not one that meets any specific, narrow definition of competitiveness. In other words, a reasonable rate would be expected to prevail in a reasonably competitive hypothetical market for mechanical licenses. Furthermore, such a rate would be expected to reflect the fair value of the copyright. A desirable property of prices that result from free markets is they reflect the fair value of the goods or services

---

contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication. (D) To minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices." 17 U.S.C. § 801(b)(1) (2010).

[18] Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions* (Cambridge, Massachusetts: The MIT Press, 1988), at 17/I.

[19] Benchmarking prices against free market rates is an approach used in other settings including regulatory price setting and transfer pricing (the "arms-length standard"). *See, e.g.,* Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions* (Cambridge, Massachusetts: The MIT Press, 1988. See also IRS transfer pricing regulations: 26 CFR 1.482-1 "Allocation of income and deductions among taxpayers," https://www.law.cornell.edu/cfr/text/26/1.482-1.

being transacted.[20] Based on the reasonable competitiveness of the market for sound recording licenses with interactive services, a hypothetical market in which mechanical licenses were freely negotiated with interactive services rather than compulsory would produce rates that reflected the value of the copyrights.

1. Normal Market Outcomes Result From Negotiations in Which the Participants are Not Compelled to Transact, But Have Outside Options

33. Much of economics was developed with the goal of understanding market outcomes when buyers and sellers act in a voluntary manner; that is, when buyers and sellers can withdraw participation from the market if they so choose.[21] While much economic analysis is understood in terms of aggregate constructs like market demand and supply relations, other situations, such as those in which the market consists of few buyers and few sellers, need to be analyzed at the transaction level. For that sort of analysis, economists rely on notions that arise when two parties negotiate the terms of a transaction. Thus, rather than buyers and suppliers acting in an arms-length and relatively anonymous manner in a market, often a buyer and seller will negotiate in an interrelated manner. This is not to say that the outcomes in anonymous, large markets and small, bilateral negotiations are unrelated, but that the choice of starting point for economic analysis depends on the realities of the economic situation.

---

[20] The classic Efficient Market Hypothesis predicts that market prices will be fair, since those prices will incorporate all of the information available to market participants. *See, e.g.,* Richard A. Brealey, Stewart C. Myers, and Franklin Allen, *Principles of Corporate Finance* (New York, NY: McGraw-Hill/Irwin, 2008), at 359.

[21] *See, e.g.,* Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions* (Cambridge, MA: The MIT Press, 1988), at p.1/I. "The coordinating and controlling mechanism is the competitive market and the system of prices that emerges out of the bargains between freely contracting buyers and sellers."

34. In this case, a normal functioning market would involve negotiations between a licensee and a licensor of copyright-protected musical works, outside the influence of any compulsory licensing regulation. A negotiation perspective is often appropriate precisely because the licensor is the exclusive rightsholder giving them a monopoly position with respect to the works that they own. In effect, all licensees must deal with that particular licensor. Assessing proper royalty rates and terms involves understanding that negotiation as it might arise if market conditions permitted it.

35. Starting with a bilateral negotiation does not preclude incorporating the effects of competition. The impact of competition is felt by both sides to a negotiation. For a buyer, if it has more than one seller that it can negotiate with, the sellers compete and the likely result has terms more favorable to the buyer. If there are multiple buyers that a seller can negotiate with to make its work available to final consumers, then the buyers compete and the likely result has terms more favorable to the seller. For there to be effective competition, therefore, both the buyer and seller must have reasonable outside options to engaging in the transaction.

36. Those outside options constrain the prices each would be willing to accept. For instance, if a buyer was willing to pay $10 to access a work, but could access the work from another seller for $5, the maximum price the buyer would accept would be $5. Similarly, if the licensor could earn $5 from an alternative source instead of licensing the work to this particular buyer, the licensor would not accept less than $5 in this negotiation, assuming it could only license this product to one licensee. If both conditions were true, then there would be no 'wiggle room' in this negotiation and the likely price would be $5. Under *perfect* competition it is often noted that prices are determined entirely by such competitive

substitutes on each side of the market. Consequently, one can consider an outcome in a negotiation like this an outcome that arises under *perfect* competition.

37. It is my understanding that the reasonable royalty rate standard of the Copyright Act does not dictate an outcome of perfect competition, but of competition that would prevail in the market if licensing musical works were not compulsory. In my opinion, this means that we should examine hypothetical negotiations over mechanical royalties in the context of licensing negotiations where *both* the licensor and licensee have strong outside options. For a licensor, this means relating its decision to opportunity costs rather than physical costs in a manner I will outline in more detail below.

2. The Market for Non-Compulsory Licensing of Sound Recordings Provides a Model for Market-Based Mechanical License Rates

38. While a market for non-compulsory licensing of musical works is hypothetical, the market for non-compulsory licensing of sound recordings provides a model for normal market conditions that should determine statutory mechanical rates. This market for non-compulsory licensing of sound recordings is not perfectly competitive, but *both* the licensors and licensees have strong outside options (i.e., it is a reasonably competitive market).[22]

---

[22] The Federal Trade Commission's (FTC's) review of the Universal EMI merger provides additional evidence of the ability of unconstrained licensing negotiations with interactive streaming services to produce reasonable rates while delivering wide access to recorded music. The FTC investigated whether the transaction would lead to higher costs to interactive streaming consumers or a more limited selection of recorded music. The merger increased market concentration, but did not raise concern over the labels' bargaining leverage in part because the labels' licensed sound recordings were found to be complements not substitutes. "After a thorough investigation into the likely competitive effects of the merger, Commission staff did not find sufficient evidence that the acquisition would substantially lessen competition in the market for the commercial distribution of recorded music." Statement of Bureau of Competition Director Richard A. Feinstein *In the Matter of Vivendi, S.A. and EMI Recorded Music*, FTC, September 21, 2012, accessed September 17, 2016,

39. The labels have the right to refuse to license their sound recordings to particular interactive streaming services and instead to continue to distribute their sound recordings through other competing channels. The services have the ability to develop offerings with different content and pricing through which to distribute the labels' competitors' sound recordings. The outcome of negotiations between the parties in this market has resulted in reasonable rates that reflect the value of these outside options to each party. It is only due to the asymmetric treatment of musical works under the law that publishers are unable to negotiate comparable deals in which they could exercise their outside options and obtain a reasonable mechanical rate.[23]

B. Relationship of Compulsory Licensing of Musical Works With Regulation of Access to Essential Facilities and ECPR

40. It has been noted that the determination of royalties for compulsory intellectual property licensing exhibits parallels with the setting of regulated prices for access to essential facilities.[24] Here I explore that relationship specifically because it is an area of economic study and practice that has generated a number of pricing solutions that are likely to be

---

https://www.ftc.gov/sites/default/files/documents/closing_letters/proposed-acquisition-vivendi-s.a.emi-recorded-music/120921emifeinsteinstatement.pdf.

23 CMM, at 149.

24 *See, e.g.*, David R. Strickler, "Royalty Rate Setting for Sound Recordings by the United States Copyright Royalty Board: The Judicial Need for Independent Scholarly Economic Analysis," Review of Economic Research on Copyright Issues, 12(1/2), (December 2015): 1-15, accessed September 17, 2016, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2714784 and Joshua S. Gans, and Stephen P. King, "Access Holidays and the Timing of Infrastructure Investment," Economic Record 80.248 (2004): 89-100, accessed September 17, 2016, https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=513514.

relevant in this context.[25] This will lead to principles that, in my opinion, should inform the royalty rates and terms being determined in these proceedings.

41. To understand the context for regulation of access to essential facilities, consider a line of rail infrastructure that goes from point A to point B. The infrastructure is owned by a rail operator who, absent regulation, has a monopoly on rail traffic between those two points. The monopolist is able to charge a price (per customer), P, for use of the rail service. This price might itself be set by regulation or alternatively by conditions in a downstream, more competitive, market. The marginal cost per customer is C ($< P$). If the rail operator has N customers, its net profit (that is, net of the costs of the rail infrastructure itself) would be $N(P - C)$.

42. Suppose another party appears (an independent rail operator) who wants to use the monopolist's rail line but not the rail service. It intends to run its own cars on the rail line but it intends to compete for existing traffic (that is, any of the monopolist's current N customers). It is readily apparent that the monopolist will likely have no interest is permitting this. Faced with this, the independent would have to duplicate the rail line in

---

[25] Separate from access pricing rules, another commonly employed regulatory pricing rule is Ramsey pricing. This rule has been used to set prices in certain regulated monopoly markets and has the property of maximizing total welfare conditional on a target profitability constraint. Prices are set such that the markup above costs is inversely proportional to the elasticity of demand. This means that less price sensitive products (i.e., products with low price elasticity) are priced higher. Products become more inelastic the more desirable or indispensable they become. This is consistent with the result of competition in differentiated product markets in which markups above costs are inversely proportional to the elasticity of demand (a relationship expressed as the Lerner Equation). As an approach to pricing mechanical royalties, without reliable estimates of elasticities and costs, this method of setting prices is not necessarily useful. Moreover, conceptually, Ramsey pricing is a means of allocating the fixed costs of providing infrastructure over a number of different uses or channels. While it is possible to consider the creation of a musical work as a fixed cost, there are many additional costs that vary and involve the discretion of different parties. Thus, they may vary from work to work in ways that evolve in unpredictable ways over time. Finally, the different uses for those works are interdependent demand – that is, downloaded music is a substitute for streaming music and vice versa. Thus, it is not only elasticities that are required but cross-price elasticities as well. These elasticities are also likely to be specific to particular works. Ultimately, Ramsey pricing is not well suited to the context of setting interactive streaming royalty rates.

order to compete. It is to prevent this form of duplication (which would be socially inefficient) that essential facilities law has come into being, the full merits of which do not concern us here.

43. The essential problem here is that there is *no market* for "above rail" access independent of the provision of rail infrastructure. The goal of access regulation is to create that market which involves requiring the monopolist to offer a separate service and then to regulate the pricing terms for that service in a manner that leads to more efficient outcomes by preventing incentives to duplicate the infrastructure, while encouraging the continued development of such infrastructure where it is needed.

44. This regulatory challenge can be mapped to the challenge in these proceedings. For interactive streaming services, musical works are an essential input. In this situation, the rightsholder is the key agent akin to the infrastructure provider who has been forced to grant services access to its intellectual property. The goal is to set pricing terms such that more efficient outcomes result (for example, that services are encouraged to pay for access and license the intellectual property when it is efficient for that to happen). Where it differs is that we are not starting from a situation where the rightsholder is necessarily providing products and controlling access to final consumers. However, I believe that we can still tap into the literature and experience regarding access regulation to inform us as to principles that should apply to any rate structure in these proceedings.

45. Before doing so, let us consider what price might emerge in the rail line example. If the government were to force the monopolist to open up access to the rail line in this situation, what might be a good price for it to insist on for that access? One option would be to engage in a full accounting of the monopolist's costs associated with the rail line

infrastructure and charge the independent a price based on those costs. However, it is often the case that such costs are difficult to measure. In fact, as I will argue below, for the analogous case of intellectual property where the rightsholder plays the role of the monopolist in this story, estimating the equivalent costs would be even more difficult.

46. For this reason, some economists have proposed a pricing approach that avoids the cost measurement issue entirely (at least for the infrastructure). This is the so-called efficient component pricing rule (ECPR) that is based on the theory of contestable markets.[26] That theory asks: what if access to the rail infrastructure were open, but the monopolist was required to set an access price at a value that would deter inefficient entry into the 'above rail' service? Or to put it another way, what price would the infrastructure owner set if it treated its integrated above rail business as an independent entity?

47. The answer is simple: the rail infrastructure provider would set a price equal to its **opportunity cost** of providing access. If an independent comes in and attracts one customer from the integrated monopolist, the monopolist loses the margin, $P - C$. This represents its opportunity cost from providing access (i.e., its lost profit). Thus, the monopolist would set an access price, a, equal to $P - C$.

48. Given this price, consider the choice of an independent. Suppose that the marginal cost of the independent, c, were greater than C (the monopolist's marginal costs). In this case, if it enters, the independent earns $P - c - a = P - c - (P - C) = C - c$ which is negative if ($c > C$). Thus, the independent would not enter if it is less efficient than the incumbent. By

---

[26] *See, e.g.,* William J. Baumol and J. Gregory Sidak, "The Pricing of Inputs Sold to Competitors," *Yale Journal on Regulation* Volume 11, Issue 1 (1994), accessed October 19, 2016, http://digitalcommons.law.yale.edu/yjreg/vol11/iss1/8?utm_source=digitalcommons.law.yale.edu%2Fyjreg%2Fvol11%2Fiss1%2F8&utm_medium=PDF&utm_campaign=PDFCoverPages.

contrast, if $c < C$, the independent is more efficient and earns a profit of $C - c$ in this case (a positive amount). In this case, the independent may enter and earn a positive profit.

49. Notice that the rule encourages entry precisely when the costs of providing the rail service are reduced by so doing and deters it otherwise. Thus, it has a convenient (productive) efficiency property. However, it does this without having to investigate the full costs of the monopolist in providing the infrastructure. Instead, it just needs knowledge of P (the rail price which should be easily observable) and C (which may require some measurement, but is based on factors capable of being measured presently rather than inferred historically). In addition, if entry occurs, the monopolist still earns $N(P - C)$ and so we do not need to consider whether the regulation is reducing its incentives to invest in infrastructure as the outcome is the same as if the regulation did not exist.

50. The opportunity cost of licensing musical works to a given interactive streaming service depends on the royalty income lost as a result of doing so. There are numerous potential sources of that lost royalty income, including lost revenue from another interactive streaming service (that may pay higher rates), as well as lost physical sales, downloads and radio/webcasting revenue. A compulsory rate set below the opportunity cost to the rightsholders would distort downstream competition and deteriorate fair royalty compensation to rightsholders. Although the ECPR model does not apply here in its traditional application, as the rightsholders are not themselves in the market providing products and controlling access to final consumers, opportunity cost compensation is a basic but critical principle of fair compensation under the ECPR model that should inform the analysis of rates and structures here.

51. To summarize, this feature of ECPR, applied to the copyright setting, implies that rates should be set so that the rightsholder is indifferent between licensing to the downstream services or not, which means that where licensing results in lost profits elsewhere, the rate should be set so as to compensate them, in the aggregate.

52. However, there is another feature that is worth stressing. Because ECPR is designed to be an informationally efficient way of computing prices, it implies that the regulator does not attempt to tailor prices to particular downstream use cases. In the copyright setting, this suggests that upstream and downstream markets should be separated such that rates set upstream do not bias business activity and competition between downstream businesses: in this case interactive streaming services.

53. As described in the above example regarding rail access, ECPR is agnostic regarding the costs, but it is also agnostic regarding the business activity of independent rail service providers so long as they do not impact on the provider's opportunity costs.[27] An advantage of this is that the regulator need not investigate or tailor prices to particular details of the services that downstream firms provide.[28] It is a rule that permits experimentation and innovation on the part of downstream firms and entry by providing non-discriminatory licensing without disadvantaging the rightsholders in their activities through other channels (e.g., alternative streaming platforms, direct sales, downloads).

---

[27] Note that this is a feature of ECPR that is not necessarily shared by other access rules (for instance, those based on Ramsey pricing). This is because ECPR aims to ensure the infrastructure provider is 'made whole' by the provision of access and not that its ultimate incentives to invest in that infrastructure are enhanced.

[28] *See, e.g.*, Joel B. Dirlam and Alfred E. Kahn, *Fair Competition, The Law and Economics of Antitrust Policy*, (Ithaca, New York: Cornell University Press, 1954), at 28. One way this is often described in regulatory contexts is a desire for competitive neutrality. Again, like ECPR, this often has its origins when there is a vertically integrated provider competing with independent downstream firms. Here the context would be interactive streaming services competing with revenue sources that music rightsholders receive through other channels. *See*, Joshua S. Gans and Stephen P. King, "Competitive Neutrality in Access Pricing," *Australian Economic Review*, 38 (2), 2005, at 128-136.

54. To align this notion with the language in the music industry, I articulate the principle ("business model neutrality") that the rate structure for mechanical licensing should be neutral with respect to the business model for interactive streaming services. In other words, the rate structure should endeavor to not reference particular business models but instead focus on the fundamental drivers of demand. Neutrality of this form often arises in normally functioning markets when inputs are supplied freely. In the case here, the input is access to a particular work. In other markets, it may be a raw material or other factor of production. It is quite natural for inputs to be supplied and for the supplier to only care about the supply price and terms and not what use the input is put to. For instance, a supplier of electricity does not care about whether a consumer has a large refrigerator or uses air conditioning. Instead, it cares about the total amount of electricity purchased and when. The principle of business model neutrality is analogous in that it calls on the rightsholder to care only about whether its work is used (via streaming or access) and not where it is used nor whether it is used in a certain context.

C. STATUTORY RATES TIED TO PARTICULAR BUSINESS MODELS ARE NOT NEUTRAL OR PREFERRED

55. In the Phonorecords I and II proceedings, licensees and licensors negotiated a variety of different rate terms and structures to address a variety of potential business models for interactive streaming.[29] In effect, these rates tried to ignite a fledgling industry, and the

---

[29] *See, e.g.*, "§ 385.13 Minimum royalty rates and subscriber-based royalty floors for specific types of services." Final Determination of Rates and Terms, In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, Docket No. 2006-3 CRB DPRA, Copyright Royalty Board. January 26, 2009, at 4532, accessed September 17, 2016. http://www.loc.gov/crb/proceedings/2006-3/dpra-public-final-rates-terms.pdf.

participants expressly stated that the rates and terms should not be precedential, and that new rate proceedings should look at the matter *de novo*.[30]

56. Consistent with the understanding that the current rate structure was envisioned to have a very specific and time-limited application, it contains a set of rates that are a snapshot in time. The current regulations in Subparts B and C contain ten different rate structures for ten different specific business models.[31] I understand that some of these models are still commonly used (e.g., standalone portable subscription mixed use), while others have commonly been merged with other plans or are not as commonly used (e.g., standalone non-portable mixed use, purchased content locker). In place of more outdated models in the regulations, there are new types of business models on the market that do not have their own customized regulations.[32]

57. This type of structure is understandable as a specific negotiation at a specific point in time, intended to boost a handful of proposed business models to see whether any would catch on. However, this is not a sound approach to setting blanket rates across the country for five years of a dynamic industry that is in a constant state of disruption and evolves quickly.

---

[30] *See, e.g.*, "In any future proceedings under 17 U.S.C. 115(c)(3)(C) and (D), the royalty rates payable for a compulsory license shall be established de novo." Final Determination of Rates and Terms, In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding, Docket No. 2006-3 CRB DPRA, Copyright Royalty Board. January 26, 2009, at 4536, accessed September 17, 2016, http://www.loc.gov/crb/proceedings/2006-3/dpra-public-final-rates-terms.pdf.

[31] Useful charts of the different rates are found at "Rate Charts," Harry Fox Agency, accessed October 24, 2016, https://www.harryfox.com/find_out/rate_charts.html.

[32] For example, Cricket Wireless' interactive streaming deal and Amazon Prime Music fall into the same category of Bundled Subscriptions for the purposes of mechanical royalty payment calculations despite offering different services. Amazon Prime provides users with access to movies and shipping deals, whereas Cricket Wireless is bundled with a phone service. See "Deezer Cricket," Cricket Wireless, accessed October 23, 2016, https://www.cricketwireless.com/support/plans-and-features/deezer-product/customer/deezer-usa.htm; "What is Prime Music," Amazon, accessed October 23, 2016, https://www.amazon.com/gp/help/customer/display.html?nodeId=201530920.

58. A rate structure designed around prevailing interactive streaming service business practices is also not business model neutral. Tying a rate structure to current service offerings can adversely affect competition in the downstream market. The success or failure and exit or entry of businesses with different business models should be determined by competition, not by the structure or level of compulsory rates.

59. As a case in point, the current regulations allow for music subscriptions to be sold as part of a bundle with a product, such as a phone. The mechanical royalty per-subscriber minimum for this type of service is 50% of the minimum for standalone portable subscriptions.[33] Thus, where end-user usage is precisely the same, a service could pay publishers and songwriters half as much just by packaging the sale of the service in a particular way. A rate like this, that favors a particular business model, may have made sense as a limited-term compromise to encourage a new market, but is not likely to be efficient because it distorts competition in the downstream market for the term of the statutory rates. Rather, a rate structure that applies equally to all business models would encourage efficiency via free and fair competition downstream.

V. EVALUATING THE PROPOSED RATES

60. I understand that the Copyright Owners propose per-play and per-user royalty rates, that correspond to the two sources of value derived from musical works, streaming and access.

---

[33] *See*, 37 C.F.R. 385.13(a)(3) (indicating a subscriber-based royalty floor for standalone portable subscription services of 50 cents per subscriber per month) and Section 385.13(a)(4) (indicating a subscriber-based royalty floor for bundled subscription services of 25 cents per month for each active user).

A. INTERACTIVE STREAMING RATES FOR SOUND RECORDINGS PROVIDE MARKET BENCHMARKS THAT BAKE-IN OPPORTUNITY COST

61. Licenses obtained by interactive streaming services from labels for rights to use sound recordings are not compulsory. Consequently, the royalty rates paid to labels are freely-negotiated market rates. These rates provide a benchmark for estimating what the aggregate average per-play rate might be for musical works in a hypothetical non-compulsory market.

62. When sophisticated market participants negotiate deals in an unconstrained market they implicitly or explicitly consider the opportunity costs involved with such deals. The relative valuations of the available alternatives influence the terms of negotiations; specifically, labels should be expected to not license interactive streaming services unless the labels will benefit from doing so by at least recovering their opportunity cost. Consequently, sound recording rates – appropriately adjusted for any economic differences expected to result from negotiating licenses for musical works instead of sound recordings – provide benchmarks that bake-in the opportunity cost.

63. I use the "Shapley value" approach (described below) to determine the ratio of sound recording royalties to musical works royalties that would prevail in an unconstrained market. I then estimate what publisher mechanical royalty rates would be in a market without compulsory licensing by multiplying the benchmark sound recording rates by this ratio. I have not carried out an analysis to arrive at benchmark sound recording rates. Rather, my analysis adopts two assumptions of benchmark sound recording rates provided by counsel, as noted below. I understand that Dr. Eisenach is providing an analysis of benchmark agreements to arrive at benchmark rates.

B. THE PROPOSED PER-PLAY RATE IS REASONABLE AND CONSISTENT WITH ESTIMATES MADE USING A SHAPLEY VALUE APPROACH

1. The Shapley Value Approach Can Be Used to Estimate a Per-Play Rate for Musical Works Based on Sound Recording Royalty Benchmarks

64. One way to analyze how interactions between rightsholders and interactive music services could be expected to produce market prices through negotiations in the absence of compulsory licensing is to model the bargaining process in a free market. Bargaining is complicated. Any solution to a bargaining game that requires specifying too much structure to the bargaining process (such as who offers first and the sequence in which multiple issues are resolved) will suffer from a lack of generality. This problem is exacerbated when there are more than two parties to a bargain. In this case the structural problem is worse because there is a new dimension of the possibility of subgroups of players forming coalitions against other players. Lloyd Shapley's solution, published in 1953, elegantly avoids these problems.[34] It does so by considering all the ways each party to a bargain would add value by agreeing to the bargain and then assigns to each party their average contribution to the cooperative bargain. It is an axiomatic feature of the fairness constructs of the Shapley value approach that market participants that make equivalent contributions to the cooperative enterprise earn the same profits.

65. Bargaining among interactive streaming services and multiple music rightsholders is exactly the type of bargaining problem that Shapley's solution is best suited to address.[35]

---

[34] Lloyd S. Shapley, "A Value for n-person Games," In Alvin E. Roth, *The Shapley Value: Essays in Honor of Lloyd S. Shapely*, Cambridge University Press, 1988, at 31-40.

[35] "The Shapley value methodology as a solution concept has been widely endorsed and lauded by economists as providing a fair and equitable allocation rule. […] For example, according to Nobel Laurate Robert Aumann; '[B]ecause of its mathematical tractability, the [Shapley] value lends itself to a far greater

The approach has also been used to model the pricing of rights in connection with the voluntary licensing of music by broadcast radio stations.[36]

66. In a market in which interactive streaming service businesses depend on obtaining licenses for the use of musical works and sound recordings, the parties could collectively benefit from entering into licensing agreements for the distribution of music. A collaborative process of mutually agreeing to royalty rates that are objectively fair provides a possible efficient solution to the bargaining problem facing participants in a hypothetical market without compulsory licensing. In the economic field of game theory, these types of market problems are referred to as games.

67. The term Shapley value is given to a solution to a cooperative game of this type and represents the share of the economic value (producer surplus, *i.e.* profits) from the joint endeavor received by each participant. The approach involves considering all the possible permutations of agreements to participate (coalitions) that could result between the parties and studying how the addition of a particular participant, in each particular sequence, adds to the combined surplus in each case. These additions to the combined surplus represent the contributions made by each party in each permutation of the coalitions between the parties. The Shapley value for a particular party in the game is the average contribution made across all of the possible coalition permutations.

---

range of applications than any other cooperative solution concept. And in terms of general theorems and characterizations for wide classes of games and economies, the value has greater range than any other solution concept bar none.'" Richard Watt, "Fair Copyright Remuneration: The Case of Music Radio," *Review of Economic Research on Copyright Issues* 7, no. 2 (2010): 21-37, accessed September 16, 2016, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1737449 (Watt 2010).

[36] *Id.*

68. This framework can be used to determine royalty rates that would result from negotiations between rightsholders and interactive music services in a hypothetical non-compulsory market. A prior CRB proceeding discussed Shapley value approach with approval for an analogous inquiry.[37] I apply the Shapley value approach below to assess how royalties for musical works would compare to sound recording royalties if they were to be negotiated freely in a non-compulsory market. The symmetry of the labels' and publishers' rights in the interactive streaming business means that this framework results in symmetric treatment—an even division of profits between labels and publishers.

a) Application of the Shapley Value Approach to Interactive Streaming

69. In the language of game theory, the participants in the endeavor are the players in the coalition game. For a given set of players, there are many possible coalitions that can form where a coalition may consist of all or a subset of the players. The value of a coalition depends on the players from whom it is comprised. While players may vary widely in the value they contribute to the coalition, they can be divided into one of two general categories, veto players and non-veto players. A veto player can be thought of in a binary sense—coalitions to which the veto player is a member may or may not have positive value, whereas coalitions to which the veto player is not a member necessarily have no value. Hence, the label 'veto player' is derived from that player's ability to block a

---

[37] The CRB determination in "Distribution of 1998 and 1999 Cable Television Funds" (CRB Docket No. 2008-1, 80 Fed. Reg. 13423, 13429-30, March 13, 2015), concluded that, "the optimal measure or approximation of relative value in a distribution proceeding—the Shapley valuation method—was neither applied nor approximated by either party." Application of the Shapley value approach was developed however, "inspired by a similar example set forth by Professor Richard Watt, Managing Editor of the Review of Economic Research on Copyright Issues and a past president of The Society for Economic Research on Copyright Issues. [citation omitted]."

valuable coalition from forming. A valuable coalition must contain all veto players as members.

70. A Shapley value is the average marginal contribution a player makes to a coalition in terms of producer surplus (*i.e.* profits) across all possible coalition orderings (*e.g.*, permutations). To illustrate this concept, consider the classic glove game. There are three players, *a, b,* and *c*. Players *a* and *b* each have a right glove and player *c* has a left glove. The surplus generated from one pair of gloves is $1 and the surplus generated from an unpaired glove is $0. In order to create any value, a coalition must form that includes player *c* and either player *a* or player *b*. The players may enter into the coalition in any order, and a player's marginal contribution is determined by the change in coalition value caused by his entering. For example, the marginal contribution of the first player to enter is always zero, as a right glove or a left glove on its own is worthless. Alternatively, if player *c* is the first to enter and player *a* is the second to enter, player *a*'s marginal contribution is $1—the coalition before he entered included only a left glove and was therefore worthless, whereas the coalition after he entered included a pair of gloves, which increased the coalition's value from zero to $1. In this example, player *a* and player *b* each have a Shapley value of $1/6 and player *c* has a Shapley value of $2/3 (see calculations in Exhibit 1). Player *c* commands a higher share of the surplus because she is the only player to own a left glove, whereas player *a* and player *b* are not—they are substitutes for one another.

71. The interactive streaming industry can be thought of as involving a set of interrelated negotiations; the outcome of which may be approximated by the Shapley value approach. Specifically, there may be a label, a publisher, and two services A and B – hypothetically, Spotify and Rhapsody – who are negotiating over the allocation of value created by a

musical work. Importantly, as they each hold a right over the musical work, in a non-compulsory negotiation, both the record company and the publisher must agree to any negotiated deal in order for value to be created. Hence, they are both veto parties with the ability to prevent value creation should they want to withdraw their participation.

72. Interestingly, one might suppose that in this environment, the streaming services might themselves command limited negotiating power. The usual intuition is that these parties are substitutes in terms of getting value to consumers, and hence, they can be played off against one another to effectively be pushed to receiving payments close to their costs, earning no surplus. However, the Shapley value approach predicts otherwise. For instance, while the record company and publisher can do without Spotify if they have a deal with Rhapsody, the Shapley value approach supposes that without Spotify waiting in the wings (so to speak), Rhapsody will command greater power. Thus, because they have a role in providing competition against one another, the publisher and record company will not push these streamers to their limits in negotiations. Both companies will earn some surplus although perhaps not as much as the veto parties in this game.

73. This illustration is, of course, a simplification. One complication is that publishers and record labels may have different cost structures. Costs do not change the Shapley values, which represent the fair share of profits that rightsholders and services should receive from the endeavor, but they affect the amount of royalties that would have to be paid to deliver these profits to publishers and labels. The profits equal to the Shapley values would be delivered to labels by paying royalties equal to the Shapley values plus their incremental costs. The Shapley value is an equitable distribution of surplus, not revenue—costs must be deducted from royalty revenue to yield profits. Any difference in incremental costs

associated with cultivating and licensing their respective repertoires would lead to different royalty rates. Since the Shapley values for publishers and labels are equal, differences in costs would lead to less than proportional differences in royalties.[38]

74. Ultimately, what we learn from this analysis is that in a hypothetical market where licensing of composition and sound recording rights were equally unconstrained, and royalties were negotiated with the aim of establishing a fair and efficient division of the surplus generated from music delivery via interactive streaming, publishers and labels would have the same ability to capture surplus. Their equal Shapley values would result in negotiated royalty rates that delivered equal profits to each.

b) Calculating Interactive Mechanical Rates Based on Shapley Values

75. The consequences of the Shapley value approach to modeling competition for the interactive streaming business is that in the absence of compulsory licensing, we would expect the publishers to make the same profit in aggregate from this business as the labels. Since the labels are able to freely negotiate interactive streaming rates that produce a competitive level of profits from this business for them, we can use this level of profits to estimate what the mechanical rate for publishers would be if they were able to do the same.

---

[38] To illustrate this point, consider the royalty rate for sound recordings (R^{sr}) and the royalty rate for compositions (R^{c}) to each be equal to the sum of two parts, cost recovery (C^{sr} and C^{c} for sound recordings and compositions respectively) and a portion of total surplus (S^{sr} and S^{c} for sound recordings and compositions respectively). Then we have $R^{sr} = C^{sr} + S^{sr}$ and $R^{c} = C^{c} + S^{c}$. Note that from the above analysis of Shapley values, we know that $S^{sr} = S^{c}$. Then if we conjecture that sound recording production costs are greater than composition production costs ($C^{sr} > C^{c}$), it must be the case that the ratio of sound recording royalties to composition royalties is less than the ratio of sound recording costs to composition costs ($R^{sr}/R^{c} < C^{sr}/C^{sr}$).

76. The historical royalties and associated profits earned by labels from interactive streaming are estimated in a recent music industry equity analyst report.[39] If publisher royalties were not subject to compulsory licensing but were determined in a free market consistent with outcomes of a Shapley cooperative game, publisher profits would equal label profits from interactive streaming. The profit margins of the publishers can then be used to infer the level of a mechanical rate that would deliver these profits to publishers after deducting expected performance royalties. This analysis, implemented in Table 3, holds label profits as fixed while determining mechanical royalty levels that would bring publisher profits to parity with them. This has the potential to change if labels renegotiate, but is a valid valuation for the present.[40]

77. The label profits from interactive streaming services are used as benchmark Shapley values (row [10]). The publisher revenues are broken down between performance royalties, which are held fixed, and mechanical revenues that are raised. This is done by applying the percent of publisher revenues attributable to mechanical royalties estimated for a number of services (row [4]).[41] The publisher royalties are increased (row [13]) such that the

---

[39] Lisa Yang, Heath P. Terry, Masaru Sugiyama, et al., "Music in the Air, Stairway to Heaven," Goldman, Sachs Equity Research, October 4, 2016.

[40] An alternative calculation would be to compute total industry profit = ($8.50 + $2.50) + α .($8.50 - $2.50) where α is a parameter capturing the potential for profit increase should mechanical royalties increase. In that case, Shapley value publisher profit = (1/2)($11) + (α/2)($6) = $5.50 + α$3. This parameter is a quantitative measure of how the services would respond in their negotiations with labels if the mechanicals were higher, typically measured by a more detailed model of market conditions. However, for this market I do not believe that there are reliable estimates of the demand, supply, and competitive conditions needed to implement the calculation – in other words, there is no reliable estimate of α - making such a calculation impossible.

[41] The services for which performance royalty data are available from Harry Fox Agency, MRI, and Audium are: 7Digital Inc., Amazon Prime Music, BBM Music, Beats Subscription Family, Cricket Wireless, Da Capo Music, LLC., Deezer Standalone Premium Plus, Google Play, Groove Music Pass, Guvera Platinum, KaZaa, Neurotic Media, Nokia, Inc., Omnifone Basic, Omnifone Unlimited Paying, Premium Elite Bi-Yearly (Sonos), Premium Elite Monthly (Sonos), Premium Elite Yearly (Sonos), Premium Plus (Bose), rara, Rdio, Rhapsody International Inc., Rithm Messaging, Samsung Milk Music Premium, Slacker Prem

remainder, after paying a portion to songwriters (at an average rate reported by analysts) produces the higher publisher profits needed to reach the Shapley value. After adding the original publisher royalties, the Shapley value-based ratio of sound recording to musical works royalties of [redacted] is computed (row [16]).

[redacted]

OnDemand, Slacker, Inc., Sony Music Unlimited-Access, Sony Music Unlimited-Basic, Sony Music Unlimited-Unlimited, Sony Music Unlimited – Unlimited 365, Spotify USA, Inc., Steinway, Inc., Wimp Music As (Tidal), XBOX Music – Zune, XBOX Music-ZunePass, and Zune. I examine mechanical royalties as a percentage of all musical works royalties from 2012 to 2015 and find little fluctuation in these calculations over time [redacted] I use the percent of publisher revenues attributable to mechanical royalties in 2015, which is at the lower bound of this range. In total, 23 services were included in my calculation.

[redacted]

78. The Shapley value-based ratio of sound recording royalties to mechanical royalties for musical works can be used to estimate mechanical royalty rates from benchmark sound recording royalty rates. I adopt as an assumption provided by counsel the benchmark effective per-play royalty rate for sound recordings of [redacted]. The Shapley value-based ratio of sound recording royalties to musical works royalties of [redacted] (Table 3, row [16]), and the percent of royalties from mechanicals (Table 3, row [17])[42] are used to estimate the corresponding mechanical rate of [redacted] (Table 3, row [18]). This same exercise can be performed on the assumed sound recording per-user rate of [redacted], which produces a per-user mechanical rate of [redacted] (Table 3 row [19]).

79. The estimated ratio of label royalties to publisher royalties of close to [redacted] narrows the historical gap that has existed between label and publisher royalties. Recent historical rates are compared to the rate computed from the Shapley values in Table 4 below. The lower ratio of royalties derived from the Shapley value approach provides further evidence that, as expected, royalties for musical works have been depressed by compulsory licensing.

---

[42] In this calculation, I assume the Average 2015 performance royalties do not increase royalty per-play computed from Harry Fox Agency data.

c) The Proposed Per-Play Rate Is Conservative Based on Estimation Using the Shapley Value Approach

80. The Shapley value approach predicts that were the statutory rate set at a level that would prevail if publishers were not subject to compulsory licensing, the profits under this statutory rate would equal the profits earned by labels. I compute the hypothetical profits that would have resulted in 2015 from royalties administered by HFA if the mechanical rates proposed by the Copyright Owners had been in effect. These rates are the greater of a per-play rate of $0.0015 and a per-user rate of $1.06 per month.[43] Based on the actual interactive streaming activity in 2015 the resulting publisher mechanical royalties were

[43] I have been advised by counsel that the rate structure proposed by NMPA consists of a per-play and a per-user rate that correspond to the two sources of value derived from musical works, streaming, and access.

[redacted] (see Table 5). The actual performance royalties were [redacted]. Using the profit margins estimated in Table 5, the associated hypothetical publisher profits are [redacted]. The [redacted] for subscription streaming services were [redacted], which correspond to estimated profits of [redacted]. The hypothetical publisher profits are [redacted] below the level that would have equated them with the profits earned by the labels. This analysis provides evidence that the proposed rates represent a conservative increase over prevailing rates.

[redacted]

2. Historical Effective Per-Play Rates Paid by Services Show the Proposed Per-Play Rate is Well Within Current Market Activity, and also Reveal the High Opportunity Costs of Compulsory Licensing

81. The compulsory licensing of musical works under Section 115 not only requires that rightsholders allow interactive streaming services to distribute their music and potentially displace existing sources of royalty revenue, but also requires that they do so to all services, irrespective of the relative effect of their particular music distribution practices on royalty revenues. Musical works rightsholders may not selectively license only to those services with business models that support interactive streaming activity that increases royalty revenues relative to other distribution channels. In an unrestrained market without compulsory licensing, rightsholders would use their ability to control distribution of their work to ensure they would be paid their opportunity cost and by doing so stimulate competition in the downstream market.

82. If Service Alpha was willing to pay $0.0007 per play, Service Beta was willing to pay $0.0015 per play, and the rightsholder accepted both deals, the royalty rate differential would give Alpha a competitive advantage over Beta that could shift consumption from Beta to Alpha over time. Such a shift would change the mix of royalty payments, with more payments at $0.0007 rather than $0.0015. Alternatively, the rightsholder could reject the deal with Alpha. The absence of the rightsholders' musical works on Alpha would tend to shift consumption to Beta and the higher royalty rate. This illustrates the opportunity cost of the rightsholder licensing to Alpha. Each Alpha stream that would have otherwise been listened to on Beta costs the rightsholder $0.0008 in lost royalty revenue. In an unconstrained market, Alpha would be forced to increase its royalty rate or forego that rightsholder's catalogue.

83. The prevailing rate structure does not include a per-play rate, but the effective per-play rates paid to date by each service provide an indication of the historical context for reasonable rates. Absent compulsory licensing, rightsholders could choose only to license those services prepared to pay reasonable per-play rates. Services currently paying lower effective per-play rates would have to choose to pay higher rates or risk losing business to higher paying rivals.

84. The mechanical royalties paid by interactive streaming services under the prevailing rate structure to date, expressed on a per stream basis, have varied across services and from year to year. As Table 6 shows, the lowest paying of the major interactive streaming services, [redacted] paid [redacted] the rate of [redacted] in 2015 and paid [redacted] of the rate that [redacted] paid in 2014. The rate proposed by the rightsholders provides a consistent rate between services, and falls into this range historically paid.

C. THE PROPOSED PER-USER RATE IS REASONABLE AND CONSISTENT WITH ESTIMATES BASED ON THE SHAPLEY VALUE APPROACH

85. The Shapley value approach provides an estimate of the ratio of sound recording royalties to musical works royalties in a free market. This Shapley value based ratio can also be used to estimate what a reasonable per-user mechanical royalty rate would be in the absence of compulsory licensing from benchmark per-user rates for sound recordings. As seen in Table 3, the benchmark rate negotiated by the labels was [redacted] per user per month. The Shapley value based ratio of [redacted] (see Table 3, row [15]) and the percent of musical works royalties attributable to mechanicals (Table 3, row [16])[44] produce an equivalent publisher mechanical rate of [redacted] (Table 3, row [19]).

86. The proposed statutory per-user rate would apply to all users on a monthly basis including ad-supported users. As with any other distinctive business model, a service would be able

[44] In this calculation, I assume the performance royalties do not increase.

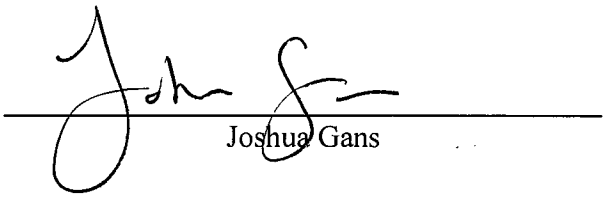
to negotiate for rates below the statutory rate if it believed that its business model would entail lower opportunity costs to the publishers, because doing so would be in their mutual interest. There is no regulatory or economic impediment or restriction on the parties to negotiate bilateral agreements, and such negotiations would be a presumptively more efficient mechanism through which to establish the appropriate exceptions to a standard rate for access and usage.

VI. CONCLUSION

87. The rates proposed by the rightsholders are below the estimates I develop from relevant benchmarks using the Shapley value approach to adjust the ratio of sound recording royalties to musical works royalties so that it reflects the outcome in a free market without compulsory licensing. This implies that the proposed rates are reasonable and represent conservative increases over the prevailing rates, which have been biased downwards over the years by compulsory licensing.

I declare under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information and belief.

Dated: October 28, 2016



Joshua Gans

EXHIBIT 1: SHAPLEY VALUE CALCULATIONS

1. To find the Shapley value of player *a* in the example of Section V.B, consider all of the six possible coalition orderings (enumerated below in **Table 7**). Player *a* enters the coalition first or third in four out of the six orderings. When player *a* enters the coalition first her marginal contribution is always $0 because when player *a* enters the coalition there is only one right glove, which is worthless. This result is shown in rows [2] and [3] of **Table 7**. When player *a* enters the coalition third her marginal contribution is also always $0 because when player *a* enters the coalition there is already one right and one left glove and player *a*'s additional right glove is worthless. This result is shown in rows [4] and [6] of **Table 7**. The last two cases to consider are when player *a* enters the coalition second. In one of these two cases player *a* will enter the coalition second behind player *b*. In this case, player *a* adds a second right glove to the coalition, which is worthless and her marginal contribution is $0. In the second case player *a* enters the coalition behind player *c* and, by creating one pair of gloves, generates $1 in surplus. This result is shown in row [5] of **Table 7**. Thus, player *a* will only generate $1 in surplus in one of the six possible orderings and, as a result, her average contribution, or Shapley value, is $1/6. Because player *b* contributes the same good as player *a* to the coalition her results will be symmetric to those of player *a* and player *b*'s marginal contribution will also be $1/6.

Table 7: Marginal Contribution of Player *a*

	Coalition Ordering			Marginal Contribution of Player
	First	Second	Third	*a*
[1]	*a*	*b*	*c*	$0
[2]	*a*	*c*	*b*	$0
[3]	*b*	*a*	*c*	$0
[4]	*b*	*c*	*a*	$0
[5]	*c*	*a*	*b*	$1
[6]	*c*	*b*	*a*	$0
[7]		**Shapley Value:**		$ 1/6

Notes: [7] = ([1] + [2] + [3] + [4] + [5] + [6]) / 6.

Table 8: Marginal Contribution of Player c

	Coalition Ordering			Marginal Contribution of Player
	First	Second	Third	*a*
[1]	*a*	*b*	*c*	$1
[2]	*a*	*c*	*b*	$1
[3]	*b*	*a*	*c*	$1
[4]	*b*	*c*	*a*	$1
[5]	*c*	*a*	*b*	$0
[6]	*c*	*b*	*a*	$0
[7]		**Shapley Value:**		$ 2/3

Notes: [7] = ([1] + [2] + [3] + [4] + [5] + [6]) / 6.

2. The marginal contributions of player *c* for each coalition ordering are enumerated in **Table 8**. Player *c* commands a larger Shapley value because she is the only player to own a left glove, which is required for the coalition to generate one pair of gloves. In contrast to player *a* and player *b*, player *c* generates surplus in four of the six possible coalition orderings. That is, as long as player *a* does not enter the coalition first she will contribute the left glove that is necessary to form a pair. The Shapley value for player *c* is then $2/3.

APPENDIX A
Documents Relied Upon by Joshua Gans

Legal Documents and Statutes

17 U.S.C. §801 (2010).

37 U.S. Code of Federal Regulations, Chapter III, Subchapter E, Parts 385.12 and 385.13.

26 U.S. Code of Federal Regulations, Chapter I, Subchapter A, Parts 1.482-1.

Copyright Royalty Board. Final Determination of Rates and Terms, In the Matter of Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding. Docket No. 2006-3 CRB DPRA. January 26, 2009. Accessed September 17, 2016. http://www.loc.gov/crb/proceedings/2006-3/dpra-public-final-rates-terms.pdf.

Distribution of 1998 and 1999 Cable Television Funds" CRB Docket No. 2008-1, 80 Fed. Reg. 13423, 13429-30, March 13, 2015.

Literature and Government Reports

Baumol, William J. and J. Gregory Sidak. "The Pricing of Inputs Sold to Competitors." *Yale Journal on Regulation* Volume 11, Issue 1, (1994). Accessed October 19, 2016. http://digitalcommons.law.yale.edu/yjreg/vol11/iss1/8?utm_source=digitalcommons.law.yale.edu%2Fyjreg%2Fvol11%2Fiss1%2F8&utm_medium=PDF&utm_campaign=PDFCoverPages.

Brealey, Richard A., Stewart C. Myers, and Franklin Allen. *Principles of Corporate Finance*. McGraw-Hill/Irwin, 2007.

Committee of the Judiciary. House Report 92-487. September 22, 1971. Accessed October 18, 2016. http://copyright.gov/reports/performance-rights-sound-recordings.pdf.

Committee of the Judiciary. House Report 94-1476. September 3, 1976. p. 106. http://www.copyright.gov/history/law/clrev_94-1476.pdf.

Dirlam, Joel B. and Alfred E. Kahn. Fair Competition. *The Law and Economics of Antitrust Policy*. Ithaca, New York: Cornell University Press. 1954.

Federal Trade Commission. Statement of Bureau of Competition Director Richard A. Feinstein. In the Matter of Vivendi, S.A. and EMI Recorded Music. September 21, 2012. Accessed September 17, 2016. https://www.ftc.gov/sites/default/files/documents/closing_letters/proposed-acquisition-vivendi-s.a.emi-recorded-music/120921emifeinsteinstatement.pdf.

Gans, Joshua S., and Stephen P. King. "Access Holidays and the Timing of Infrastructure Investment." Economic Record 80.248 (2004): 89-100. Accessed September 17, 2016. https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=513514.

Gans, Joshua S. and Stephen P. King. "Competitive Neutrality in Access Pricing." *Australian Economic Review*, 38.2 (2005).

Kahn, Alfred E. *The Economics of Regulation: Principles and Institutions*. Cambridge, Massachusetts: The MIT Press, 1988.

Mitchell, Skyla. *Reforming Section 115: Escape from the Byzantine World of Mechanical Licensing.* Cardozo Arts & Entertainment Law Journal 24(3) (March 2007). Accessed September 15, 2016.

Shapley, Lloyd S. "A Value for n-person Games." In *The Shapley value: essays in honor of Lloyd S.Shapely.* Cambridge University Press, 1988.

Strickler, David R. "Royalty Rate Setting for Sound Recordings by the United States Copyright Royalty Board: The Judicial Need for Independent Scholarly Economic Analysis." Review of Economic Research on Copyright Issues 12(1/2) (December 2015): 1-15. Accessed September 17, 2016. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2714784.

U.S. Copyright Office. "Copyright and the Music Marketplace, A Report of the Register of Copyrights." February 2015.

Watt, Richard. "Fair Copyright Remuneration: The Case of Music Radio." *Review of Economic Research on Copyright Issues* 7, No. 2 (2010): 21-37. Accessed September 16, 2016. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1737449.

Websites

"Slacker Launches On-Demand Music Service," *Los Angeles Times*, May 17, 2011, accessed October 25, 2016. http://latimesblogs.latimes.com/music_blog/2011/05/slacker-launches-on-demand-music-service.html.

"Stream Daily: New Subscription Service Playster Launches Globally." Playster. December 14, 2015. Accessed October 18, 2016. https://blog.playster.com/news-posts/new-subscription-service-playster-launches-globally/.

Amazon. "What is Prime Music." Accessed October 23, 2016. https://www.amazon.com/gp/help/customer/display.html?nodeId=201530920.

Apple. "Introducing Apple Music—All the Ways You Love Music. All in One Place." June 30, 2016. Accessed October 25, 2016, https://www.apple.com/pr/library/2015/06/08Introducing-Apple-Music-All-The-Ways-You-Love-Music-All-in-One-Place-.html.

Andrews, Robert. "In Unlimited Music Race, Rdio Has Beaten Spotify to US Launch." *The Guardian.* August 4, 2010, https://www.theguardian.com/technology/pda/2010/aug/04/rdio-spotify-music-us (last accessed October 18, 2016).

Christman, Ed. "Amazon Launches Prime Music Streaming Service, Minus UMG." *Billboard.* June 12, 2014. Accessed October 18, 2016. http://www.billboard.com/biz/articles/news/digital-and-mobile/6114217/amazon-launches-prime-music-streaming-service-minus-umg.

Constine, Josh."Google Launches 'Google Play Music All Access' On Demand $9.99 A Month Subscription Service." *TechCrunch*, May 15, 2013. Accessed October 25, 2016. https://techcrunch.com/2013/05/15/google-play-music-all-access/.

Cricket Wireless. "Deezer Cricket." Accessed October 23, 2016. https://www.cricketwireless.com/support/plans-and-features/deezer-product/customer/deezer-usa.htm.

Dredge, Stuart. "Tidal Takes On Spotify with Lossless-Quality Streaming Musi." *The Guardian.* October 28, 2014, https://www.theguardian.com/technology/2014/oct/28/tidal-lossless-streaming-music-spotify (last accessed October 18, 2016).

Ek, Daniel. "Hello America. Spotify Here." Spotify News. July 7, 2014, https://news.spotify.com/us/2011/07/14/hello-america-spotify-here/ (last accessed October 18, 2016).

Flanagan, Andrew, and Rebecca Sun. "Deezer Launches, After a Fasion, in the U.S." *Billboard.* July 19, 2016, http://www.billboard.com/articles/business/7445723/deezer-launches-us (last accessed October 18, 2016).

Flanagan, Andrew. "SoundCloud Launches Its Subscription Service, Go." *Billboard.* March 29, 2016, http://www.billboard.com/articles/business/7311612/soundcloud-go-subscription-service-launches (last accessed October 18, 2016).

iHeartMedia. "iHeartMedia Revolutionizes Live Radio and Introduces On Demand With New Services 'iHeartRadioPlus' And 'iHeartRadio All Access." September 23, 2016. Accessed October 18, 2016. http://www.iheartmedia.com/Pages/iHeartMedia-Revolutionizes-Live-Radio-And-Introduces--On-Demand-With-New-Services--%E2%80%98iHeartRadio-Plus%E2%80%99-And-%E2%80%98iHeartRadio-All-.aspx.

Kyung-Hoon, Kim. "Amazon and Pandora Set to Launch New Music Streaming Services, NY Times." *Reuters.* September 11, 2016. Accessed October 18, 2016. http://www.reuters.com/article/us-amazon-com-music-idUSKCN11I023.

Microsoft. "Introducing Xbox Music: The Ultimate All-in-One Music Service Featuring Free Streaming on Windows 8 and Windows RT Tablets and PCs." October 15, 2012. Accessed October 25, 2016. https://news.microsoft.com/2012/10/15/introducing-xbox-music-the-ultimate-all-in-one-music-service-featuring-free-streaming-on-windows-8-and-windows-rt-tablets-and-pcs/#sm.000jd442w15kwcn6xyh194pk3tjgo.

Napster Team. "Rhapsody and Napster to Wind Down Partnership with the Echo Nest." Napster. March 21, 2014. Accessed October 18, 2016. http://blog.napster.com/us/2014/03/21/rhapsody-and-napster-to-wind-down-partnership-with-the-echo-nest/.

Rego, Diego Planas. "We've turned 5 – here's our story so far!" Spotify News. October 7, 2013. Accessed October 27, 2016. https://news.spotify.com/us/2013/10/07/the-spotify-story-so-far/.

Sisario, Ben. "Adele is Said to Reject Streaming for '25'." *The New York Times*. November 20, 2015. Accessed October 24, 2016. http://www.nytimes.com/2014/11/12/business/media/taylor-swifts-stand-on-royalties-draws-a-rebuttal-from-spotify.html.

Sisario, Ben. "Chief Defends Spotify After Snub by Taylor Swift." *The New York Times*. November 21, 2014. Accessed October 24, 2016. http://www.nytimes.com/2014/11/12/business/media/taylor-swifts-stand-on-royalties-draws-a-rebuttal-from-spotify.html.

The Harry Fox Agency. "Rate Charts." Accessed October 23, 2016. https://www.harryfox.com/find_out/rate_charts.html.

The Harry Fox Agency. "What Are Mechanical Royalty Rates?" 2015. Accessed October 19, 2016. https://www.harryfox.com/license_music/what_mechanical_royalty_rates.html.

Data

cv2016.xls. Downloaded from "Individual Year Conversion Factor Tables." Oregon State University. Accessed October 19, 2016. http://liberalarts.oregonstate.edu/spp/polisci/faculty-staff/robert-sahr/inflation-conversion-factors-years-1774-estimated-2024-dollars-recent-years/individual-year-conversion-factor-table-0.

Analysis of Music Streaming Services for 2014. Audiam, *accessible at* http://blog.audiam.com/2015/06/the-2014-interactive-streaming-data-as_20.html ("Audiam data")

[redacted] (SONY-ATV00005246)

[redacted] (KOBALT00000096 – KOBALT00001308)

[redacted] (HFA00000001)

[redacted] (SONY-ATV00005245)
[redacted] (APL-PHONO_00006817 - APL-PHONO_00006832)

Miscellaneous

Yang, Lisa, Heath P. Terry, Masaru Sugiyama, et al. "Music in the Air, Stairway to Heaven." Goldman Sachs Equity Research. October 4, 2016.

[redacted] (SONY-ATV00001820 – SONY-ATV00001839)

[redacted] (APL-PHONO_00009021 - APL-PHONO_00009079)

[redacted]
(PAN_CRB115_00094163 - PAN_CRB115_00094206)

[redacted] (PAN_CRB115_00093953 – PAN_CRB115_00094048)

[redacted]
(SPOTCRB0005959)

[redacted].
(SPOTCRB0005221 - SPOTCRB0005409)

[redacted]
(KOBALT00000011 – KOBALT00000014)

APPENDIX B: CV OF JOSHUA GANS

Joshua Samuel Gans

Contact

Phone (Canada): (647) 273 3202
Phone (US): (559) 325 4267
E-Mail: Joshua.Gans@core-research.com.au

Citizenship: Australian

Education

Stanford University, U.S.A., Doctor of Philosophy (in Economics), 1990 - 1994, Dissertation Title: *Essays on Economic Growth and Change*, Advisors: Professors Paul Milgrom, Kenneth J. Arrow and Avner Greif.

University of Queensland, Australia, B.Econ (First Class Honours) with majors in Economics and Law, 1986 - 1989.

Positions Held

Current:

Professor of Strategic Management and Jeffrey S. Skoll Chair of Technical Innovation and Entrepreneurship, Rotman School of Management, and (Honorary) Professor, Dept of Economics, University of Toronto (July 2011 -)

Area Coordinator, Department of Strategic Management, Rotman School of Management (July 2013 -)

Chief Economist, Creative Destruction Lab, University of Toronto (June 2014 -)

Research Associate, National Bureau for Economic Research (May 2012 -)

Research Affiliate, Center for Digital Business, Sloan School of Management, Massachusetts Institute of Technology (May 2012 -)

Managing Director, Core Economic Research (June 2001 -)

Chief Economist, Revlo (2015 -)

Advisory Board, The Conversation (2011 -)

Advisory Board, Coursepeer Ltd (2012 -)

Associate Editor, Management Science (Strategy) (2010 -)

Associate Editor, Journal of Industrial Economics (2008 -)

Previous:

Professor of Management (Information Economics), Melbourne Business School University of Melbourne (October 2000 – June 2011); *Professorial Fellow*, Department of Economics, University of Melbourne (2001-2011), *Associate Professor* (July, 1996 – October 2000)

Visiting Researcher, Microsoft Research (New England Lab) (January – June 2011).

Visiting Scholar, Harvard University (Economics) and NBER (December 2009 – January 2011).

Co-Editor, *International Journal of Industrial Organization* (2005 - 2011)

Co-Editor, *Journal of Economics and Management Strategy* (2003 - 2008)

Director, Centre for Ideas and the Economy, Melbourne Business School (October 2006 -).

Director, Economic Theory Centre, University of Melbourne (January, 2006 – December 2009); *Associate Director* (September 2001 – December 2005).

Director, Intellectual Property Research Institute of Australia (August 2006 – January, 2007), *Associate Director* (March, 2002 - August 2006).
Advisory Board, Rismark Pty Ltd (2005 - 2010)
Advisory Board, Aplia.com (2005 - 2007)
Director, Melbourne Business School Ltd (October 2003 – October 2006)
Lecturer, School of Economics, University of New South Wales (September, 1994 - July, 1996)

Honors and Awards

Best Paper in Technology Management, Informs (Runner-Up), 2013
Excellence in Teaching Award, Rotman School of Management, 2012
Excellence in Refereeing Award, *American Economic Review*, 2012
Fellow, Strategy Research Initiative, 2012 -
Australian Publishers Association Award for Best Tertiary Adaptation (Teaching & Learning), 2009.
Fellow of the Academy of Social Sciences, Australia, 2008 -
Young Economist Award, Economic Society of Australia, 2007
Woodward Medal in Humanities and Social Science, 2006
Professorial Fellow, Department of Economics, University of Melbourne, 2001 -
Best Discussant, Annual PhD Conference in Economics and Business, 2002.
Fellowship, Jerusalem Summer School in Economic Theory, 1993
Stanford Center for Conflict and Negotiation Fellowship, 1993
Fulbright Postgraduate Scholarship, 1990
Stanford University Graduate Fellowship, 1990
University Medal, University of Queensland, Australia, 1989
Reserve Bank of Australia Cadet Scholarship, Australia, 1988

Teaching Experience

Postgraduate subjects in microeconomics, incentives and contracts, economics of innovation, macroeconomics, advanced game theory, personnel economics, network and digital market strategy (Rotman School of Management, University of Toronto, Melbourne Business School and University of New South Wales, AGSM and School of Economics)
The Next 36 (Toronto), lectures in digital market strategy and on-going supervision of start-ups
Undergraduate subjects in microeconomics, macroeconomics, technological change and development, network and digital market strategy (University of Toronto, University of New South Wales)
Executive Education in technology strategy (INSEAD) and regulatory economics

Consulting

1. *Long-term Associations*

- Brattle Group (January 2015 -)
- Keystone Strategy (August 2011 -)
- CoRE Research (June, 2001 – September 2014)
- Australian Competition and Consumer Commission (October, 1999 – June 2000; March 2006 – December 2007)
- Charles River Associates, Senior Consultant (August 2002 – August 2005)
- The Economist Advocate (February, 1999 – June 2002)
- London Economics, Australia (February 1997 - May, 1999)

2. Litigation and Witness Statement Preparation

- Expert witness in valuation of intellectual property matter on behalf of Semantic Computing (June – November 2015)
- Expert witness on copyright dispute for arbitration with regard to mobile apps for telecommunications carriers (2013-14).
- Expert witness in class action against Whirlpool Ltd in Ohio on damages associated with damaged front-loading washing machines (2013 - 2014). Testified on damages in jury trial in October 2014.
- Chief economic expert witness to the Federal Trade Commission on its antitrust claim – exclusionary conduct and abuse of market power – against Intel (2009-2010).
- Expert witness advice to Fortescue Metals Group in the Mt Newman declaration decision against BHP-Billiton, Australian Competition Tribunal (June 2007 – December 2009).
- Expert Witness Affidavit and Deposition on behalf of Third Wave Ltd in antitrust litigation in the HPV testing market against Digene Ltd in the US Federal Court, Wisconsin (August 2007 – January 2008).
- Expert witness advice to the WA Potato Marketing Corporation in a constitutional dispute (July 2007 – January 2008)
- Expert witness advice to the ACCC on an Australian Copyright Tribunal dispute involving Fitness Australia and PCMA (May 2007 – April 2009)
- Expert witness statement construction on behalf of Foodstuffs NZ in Court proceedings with the NZCC on a potential acquisition of The Warehouse (August, 2007 – July 2008)
- Expert Witness Testimony on behalf of Victorian Chicken Meat Processors on the collective boycott authorisation for chicken growers at the Australian Competition Tribunal (July 2005 – November 2005).
- Expert Witness Testimony on behalf of ARA on hazardous waste trade in the Administrative Appeals Tribunal (December 2002 – February 2003).
- Expert testimony for TXU in appeal at the Victorian Supreme Court over the ORG's electricity pricing determination (March, 2001).
- Expert witness at Appeal Tribunal for United Energy appealing the Office of the Regulator General's Determination on prices for electricity distribution in Victoria (October, 2000)
- Expert witness at the Administrative Appeals Tribunal for the Australian Communications Authority on dispute with Cable and Wireless Optus over local number portability requirements (August, 1999)
- Advice to ACCC on trade practices matter against Safeway (July, 1998 – August,, 1999)
- Advice to ACCC on predatory pricing case against Boral (April, 1998 – February, 2000)
- Assistance to Professor Philip Williams in preparation of expert witness statement for Australian
- Competition Tribunal consideration of the authorisation of the Australian Performing Rights Association (January - August, 1998)
- Report on damages calculation for misleading information case in the building industry (August, 1997)
- Report on the economic theory of damages for price fixing violations (March, 1997)
- Submission of competitive implications of Pay TV mergers in New Zealand (Nov 1996)

3. Projects by Industry

1. **Electricity**

- Evaluation of a methodology for assessing market power in wholesale electricity markets in New Zealand for the Commerce Commission (June 2008).
- Economic advice to the ACCC on the proposed AGL-TRU Energy electricity asset swap in South Australian (March, 2007)
- Economic advice to the ACCC on the partial acquisition of Loy Yang Power by AGL (November – December 2003).
- Expert testimony for TXU in appeal at the Victorian Supreme Court over the ORG's electricity pricing determination (March, 2001).

- Report critiquing the form of regulation of Victorian electricity distribution, on behalf of United Energy (September - October, 2000).
- Participation in a training program for Macquarie Generation (December, 1999)
- Economic analysis of electricity generating asset in preparation for a bid (March, 1999)
- Analysis of a contract for sale of electricity to a smelter project (February, 1999)
- Report on NEMMCO pricing principles for the National Retailers Association (September, 1998)
- Analysis of gaming the National Electricity Market Rules (February, 1998)
- Analysis of proposal for allocation of power purchasing agreements in Queensland (December, 1997)
- Analysis of vesting contract arrangements for the Queensland Electricity Reform Unit (December, 1997)
- Analysis of proposals for electricity transmission pricing in Queensland (September, 1997)
- Report on options for electricity industry reform in Western Australia (September, 1997)
- The role of greenhouse gas regulation on electricity pool behaviour (July, 1997)
- Advisor to Queensland Electricity Reform Unit: review of generator market strategies in the NEM and the implications of contracts (May 1997 - November, 1999).
- Bid for Loy Yang: report on the implications of market power for asset values (October-February 1997);
- ETSA Generation: report on the regulation of market power (August, 1996);
- NSW Electricity: report to ACCC on potential for anti-competitive behaviour (March - April, 1996);

2. **Gas**

- Analysis of a proposed AGL-Alinta arrangement on behalf of the ACCC (May, 2006).
- Submission on behalf of Envestra to the Queensland Competition Authority regarding its determination on regulated prices for Queensland's gas distribution network (March - April, 2001).
- Analysis of the competitive implications of a gas contract for electricity generation (March, 1998).
- Advice on the use of electricity prices in gas supply contracts to generators (May, 1997).
- Evaluation of R.J. Rudden report on AGL's cross subsidies (April, 1997)
- Gas transmission pricing: reviewed IPART gas transmission submission on behalf of BHP (October 1996-April 1997);
- Gas market: report on the market power implications of the proposed Victorian gas market and examined alternative market arrangements (January-March 1997);
- ETSA Gas: reports on appropriate pricing of gas in electricity use (April, 1996);

3. **Telecommunications**

- Economic advice to the ACCC of mobile termination pricing (September 2007)
- Economic advice to the NZCC on imputation tests in telecommunications (April 2007)
- Economic advice to the ACCC on the copper tails pricing by the G9 (August, 2007)
- Economic advice to the ACCC on Telstra's ULLS undertakings (May – August 2006)
- Economic advice to the NZCC on a 0867 dispute with Telecom NZ (2006).
- Submission to the ACCC on behalf of AAPT in relation to the report by Professor Hausman on mobile termination (April 2005).
- Submission to the ACCC on behalf of Hutchison Telecommunications in respect of its mobile services review (July 2003).
- Submissions to the ACCC on behalf of AAPT in respect of Telstra's proposed PSTN undertakings (June 2003).
- Advice to Hutchison telecommunications on bundling in Pay TV markets (June 2002)
- Advice and analysis to AAPT with regard to its interconnection pricing dispute with Telstra at the Australian Competition Tribunal (April, 2001 – May, 2002).
- Report submitted as part of SingTel submission to the ACCC evaluating the competitive implications of Vodafone's undertakings with respect to its proposed bid for C&W Optus (February, 2001).

- Research report for ACCC on Mobile termination of fixed line calls (December, 1999)
- Research report for ACCC on PSTN termination by non-dominant networks (December, 1999)
- Expert witness for the Australian Communications Authority/ACCC in a matter against Cable and Wireless Optus at the Administrative Appeals Tribunal on local number portability (August, 1999)
- Advice to ACCC on commercial churn matter against Telstra (March, 1999 – January, 2000)
- Analysis of criteria for declaration of intercity transmission lines in telecommunications (ACCC); (March, 1998)
- Report on contracting arrangements in telecommunications (October, 1997)
- Report on local number portability and technology adoption for Telstra (November, 1996)

4. **Banking and Financial Services**

- Economic research on behalf of Visa International (March – October 2016).
- Economic advice to Suncorp on proposed acquisition of Promina (October – November 2006).
- Submission to the ACCC on behalf of Cash Services Australia regarding the share acquisition by National Australia Bank (October 2005).
- Submission to the ACCC on behalf of First Data with regard to its acquisition of CashCard (November 2003 – January 2004).
- Research report and assistance to the National Australia Bank in assessing the competitive implications and regulatory options for the setting of interchange fees in credit card associations (March, 2000 – March 2001).
- Examination of theoretical arguments regarding horizontal mergers in Australian banking industry (March, 1997 and May, 1998)
- Analysis, on behalf of Lend Lease, of submission to the ACCC for a joint venture between Lend Lease and National Mutual (November - December, 1997)
- Report on access to the electronic payments system for the National Australia Bank (March - July, 1998).

5. **Pharmaceuticals**

- Advice to Mayne Healthcare on wholesale reform under the Pharmaceutical Benefits Scheme (February 2002).
- Advice to the National Pharmaceutical Services Association on the changes to the wholesale margin in the Pharmaceutical Benefits Scheme (May 2001 - June 2001).
- Advice to Faulding Healthcare on implications of COAG review of the pharmaceutical industry (April, 1999 – June, 1999)
- Economic analysis, on behalf of Faulding, of the competition issues surrounding a proposed takeover of AMCAL by Faulding Retail (September, 1998).
- Report on merger authorisation for Sigma and QDL(Nov, 1996)

6. **Other**

- Economic advice to Microsoft on antitrust matters (January – December, 2012)
- Economic advice to Microsoft on patent royalties (May, 2012 -)
- Economic advice to US Airways on online travel retailing (February – May 2012)
- Economic advice to Foodstuffs (NZ) on a potential merger with The Warehouse (July-August, 2007).
- Economic advice to the NZCC on a dispute between Pete's Post and NZ Post on a s36 matter (March, 2007).
- Economic advice to Visy on price fixing matters and damages calculations (October 2006 - 2008).
- Advice to Metcash on the potential acquisition by Woolworths of an IGA Outlet in Jindabyne (June 2007 – August 2007)
- Economic advice to the ACCC on a proposed acquisition by Video Easy of Blockbuster (June – August, 2007)
- Economic advice to Leighton Holdings on a contract dispute with the WA Government (May – July 2007).
- Economic advice to the ACCC on exclusionary conduct by Nestle (October, 2006 – January 2007)
- Economic advice to OneSteel on proposed acquisition of Smorgon Steel (June – June 2007).

- Economic advice to ACCC on definitions of regulatory risk (June, 2006).
- Economic advice to VicForests on proposed auction designs (2006)
- Economic advice to Barloworld on their proposed acquisition of Wattyl (October 2004 – June 2006)
- Economic advice to the ACCC on Alinta's proposed acquisition of AGL (May 2006)
- Submission on behalf of CSR on exclusive dealing arrangements of James Hardie (February 2006)
- Economic advice to the ACCC on Toll's proposed acquisition of Patrick (October 2005 – March 2006)
- Economic advice to the ACCC on Patrick's proposed acquisition of FCL (July – September, 2005).
- Submission to the IPART review of rents for Crown Land for Broadcast towers on behalf of Broadcast Australia (May 2005).
- Economic advice to Pacific Brands on the proposed acquisition of Joyce by Dunlop Foams (September 2004 – January 2005).
- Economic analysis of smash repairs and insurance for Consumer Affairs Victoria (September, 2004).
- Analysis of exclusive dealing claim by Peter Stevens Motorcycles against Kawasaki on behalf of Kawasaki (July – October 2004).
- Report for the MTAA on shopper docket schemes in petrol retailing (August 2004).
- Economic advice to Boral on its proposed acquisition of Adelaide Brighton and litigation against the ACCC (May 2004 – October 2004).
- Work for AWBI on the value of the single desk and its performance in wheat marketing (September 2003 – September 2004).
- Report for Medibank Private on the economic case for a private health insurance rebate (October 2002 – February, 2003).
- Submission to Productivity Commission on behalf of Adsteam Marine Ltd on harbour towage regulation (May – June 2002).
- Submission to ACCC on behalf of Adsteam Marine Ltd on capital cost calculations in harbour towage pricing (April 2002).
- Evaluation of the single desk selling of dairy products on behalf of the Australian Dairy Corporation (September 2001).
- Advice to the ACCC on competition issues associated with B2B E-Commerce (August - September, 2001).
- Submission to the Victorian Treasury on the role of economic regulation and supply security in the proposed Essential Services Commission, on behalf of the Regulated Businesses Forum (October, 2000).
- Submission to the Competition Review of the Wheat Marketing Act on behalf of AWB Limited (March - August, 2000).
- Analysis of the Victorian Freight Rail access pricing regime for Freight Australia (July, 2000).
- Paper for Inquiry into Intellectual Property on behalf of APRA (November, 1999).
- Competitive Analysis of the proposed acquisition of Hymix by Pioneer (December, 1998)
- Analysis of access pricing principles for interstate rail (ACCC); (December, 1997)
- Assistance to Fairfax on submission to Productivity Commission on broadcast regulation (April, 1999);
- Report on supply security in electricity, gas and water (December, 1998)
- Analysis of merger between two oil refineries (August, 1998)
- Report on the Efficient Allocation of Digital Spectrum for John Fairfax Holdings Ltd (February, 1998)
- Report on product standards for electrical appliances in Victoria (March, 1997)
- Report on social implications of a merger for the provision of radiology services in Queensland (Jan 1997)
- Report on infrastructure access dispute in aluminium mining (November, 1996).
- Freight Rail Corp (NSW): Access dispute resolution with IPART (October 1996).
- Rationale for group negotiations for regional medical practitioners (September, 1996).
- Air NZ: theoretical work on the efficiency of access pricing by airports (March - April, 1996);
- Local Government Reform in Tasmania: developing a conceptual framework for the re-organisation of governmental responsibilities among local and state governments (February - May, 1996).
- New South Wales Taxation Authority: Demand conditions in swimming pool construction (December, 1994).

Publications

Books

1. The Disruption Dilemma (MIT Press), 2016.
2. Information Wants to be Shared, (Harvard Business Review Press: Boston), 2012.
3. Parentonomics: An economist dad's parenting experiences, New South: Sydney, 2008 (MIT Press: Cambridge (MA), 2009).
4. Core Economics for Managers, Thomson Learning, 2005.
5. Finishing the Job: Real World Policy Solutions in Housing, Health, Education and Transport, (with Stephen King) Melbourne University Publishing: Melbourne, 2004.
6. Publishing Economics: Analyses of the Academic Labour Market in Economics, Edward Elgar: Cheltnam, 2000.
7. Principles of Economics (with Stephen King, Robin Stonecash and N. Gregory Mankiw), 6th Pacific Rim Edition, Cengage, Melbourne, 2015 (1st Australasian Edition, Harcourt, Sydney, 2000).
8. Principles of Macroeconomics (with Robin Stonecash, Stephen King and N. Gregory Mankiw), 6th Pacific Rim Edition, Cengage, Melbourne, 2015 (1st Edition, Harcourt-Brace, Sydney, 1999).
9. Principles of Microeconomics (with Stephen King and N. Gregory Mankiw), 6th Pacific Rim Edition, Cengage, Melbourne, 2015 (1st Edition, Harcourt-Brace, Sydney, 1999).

Working Papers

1. "A Comparison of Ex Ante and Ex Post Vertical Market Supply: Evidence from the Electricity Supply Industry" (with Frank Wolak)
2. "Contracting over the Disclosure of Scientific Knowledge" (with Fiona Murray and Scott Stern)
3. "Markets for Scientific Attribution" (with Fiona Murray)
4. "When do patents encourage disclosure?" (with Scott Stern)
5. "Permission to Exist," (Martin Byford).
6. "Operationalizing Value-Based Business Strategy" (with Glenn MacDonald and Michael Ryall)
7. "Procrastination in Teams" (with Peter Landry)
8. "Does Organizational Form Drive Competition? Evidence from Coffee Retailing" (with Brian Adams, Richard Hayes and Ryan Lampe)
9. "Some Simple Economics of the Blockchain" (with Christian Catallini)
10. "Market Structure in Bitcoin Mining" (with June Ma and Rabee Tourky)
11. "Foundations of Entrepreneurial Strategy" (with Scott Stern and Jane Wu)
12. "Exit, Tweets and Loyalty: Evidence from Airlines" (with Avi Goldfarb and Mara Lederman)

Journal Articles

International

1. "The Impact of Multi-homing on Advertising Markets and Media Competition" (with Susan Athey and Emilio Calvano), *Management Science* (forthcoming).
2. "Negotiating for the Market," *Advances in Strategic Management* (forthcoming).

3. "Value Capture Theory: A Strategic Management Review," (with Michael Ryall), *Strategic Management Journal*, forthcoming.
4. "Weak versus Strong Net Neutrality: Correction and Clarification," (with Michael Katz) *Journal of Regulatory Economics*, Vol. 50, (1), 2016, pp. 99-110.
5. "The other disruption," *Harvard Business Review*, March 2016, pp.78-85.
6. "Keep Calm and Manage Disruption," *Sloan Management Review*, February 22, 2016.
7. "'Selling Out' and the Impact of Music Piracy on Artist Entry," *Information Economics and Policy* Vol. 32, September 2015, pp.58-64.
8. "Remix Rights and Negotiations over the use of Copy-Protected Works," *International Journal of Industrial Organization*, Vol.41, July, 2015, pp.76-83.
9. "Exploring Tradeoffs in the Organization of Scientific Work: Collaboration and Scientific Reward," (with Michael Bikard and Fiona Murray) *Management Science*, Vol.61, No.7, July 2015, pp.1473-1495.
10. "Weak versus Strong Net Neutrality," *Journal of Regulatory Economics*, Vol. 47 (2), 2015, pp.183-200.
11. "Does the Lunar Cycle Affect Births and Deaths?" (with Andrew Leigh), *Journal of Articles in Support of the Null Hypothesis*, Vol.11, No.2, February 2015.
12. "Collusion at the Extensive Margin" (with Martin Byford), *International Journal of Industrial Organization*, Vol. 37, November 2014, pp.75-83
13. "Dynamic Commercialization Strategies for Disruptive Technologies: Evidence from the Speech Recognition Industry," (with Matt Marx and David Hsu), *Management Science*, Vol.60, No.12, 2015, pp.3103-3123.
14. "Bilateral Bargaining with Externalities" (with Catherine de Fontenay), *Journal of Industrial Economics*, Vol.64, No.4, 2014, pp.756-788.
15. "Exit Deterrence" (with Martin Byford), *Journal of Economics and Management Strategy*, Vol.23, No.3, 2014, pp.650-669.
16. "Innovation Incentives Under Transferable Fast-Track Regulatory Review" (with David Ridley) *Journal of Industrial Economics*, Vol.61, No.3, 2013, pp.789-816.
17. "Entrepreneurial Commercialization Choices and the Interaction between IPR and Competition Policy," (with Lars Persson), *Industrial and Corporate Change*, Vol. 22, No. 1, 2013, 131-151.
18. "Innovation and Climate Change Policy," *American Economic Journal: Economic Policy*, Vol.4 No.4, 2012, pp.125-145.
19. "Mobile Application Pricing," *Information Economics and Policy*, Vol.24, No.1, March 2012, pp.52-59.
20. "Platform Siphoning: Ad-Avoidance and Media Content," (with Simon Anderson), *American Economic Journal: Microeconomics* Vol.3, No.4, November 2011, pp.1-34.
21. "How Does the Republic of Science Shape the Patent System? Broadening the Institutional Analysis of Policy Levers for Innovation and Knowledge Disclosure," (with Fiona Murray and Mackey Craven), *UC Irvine Law Review*, Vol.1 No.2, 2011, pp.359-395.
22. "Remedies for Tying in Computer Applications," *International Journal of Industrial Organization*, 29 (5), 2011, pp.505-512.
23. "Carbon Offset Provision with Guilt-Ridden Consumers" (with Vivienne Groves), *Journal of Economics and Management Strategy*, Vol.21, No.1, 2012, pp.243-269.
24. "Why Tie a Product Consumers Do Not Use" (with Dennis Carlton and Michael Waldman), *American Economic Journal: Microeconomics*, Vol.2, No.3, August 2010, pp.85-105.
25. "The Impact of Targeting on Advertising Markets and Media Competition," (with Susan Athey), *American Economic Review Papers and Proceedings*, Vol.100, No.2, May 2010, pp.608-613.
26. "When is Static Analysis a Proxy for Dynamic Considerations? Reconsidering Antitrust and Innovation," *Innovation Policy and the Economy*, Vol.11, 2010, MIT Press: Cambridge (MA).
27. "Exclusivity, Competition and the Irrelevance of Internal Investment," (with Catherine de Fontenay and Vivienne Groves), *International Journal of Industrial Organization*, Vol.28, No.4, 2010, pp.336-340.

28. "Is There a Market for Ideas?" (with Scott Stern), *Industrial and Corporate Change*, Vol.19, No.3, 2010, pp.805-837.
29. "The Millennium Bub" (with Andrew Leigh), *Applied Economics Letters*, Vol.16, No.14, 2009, pp.1467-1470.
30. "A Dearth of Exit Strategies," *Sloan Management Review*, Spring 2009, pp.19-20.
31. "Born on the First of July: An (Un)natural Experiment in Birth Timing," (with Andrew Leigh), *Journal of Public Economics*, Vol.93, Nos.1-2, February 2009, pp.246-263.
32. "A Bargaining Perspective on Strategic Outsourcing and Supply Competition," (with Catherine de Fontenay), *Strategic Management Journal*, Vol.29, No.8, August 2008, pp.819-839.
33. "The Impact of Uncertain Intellectual Property Rights on the Market for Ideas: Evidence for Patent Grant Delays" (with David Hsu and Scott Stern) *Management Science*, Vol.54, No.5, May 2008, pp.982-997.
34. "Concentration-Based Merger Tests and Vertical Market Structure" *Journal of Law and Economics* Vol.50, No.4, November 2007, pp.661-680.
35. "Introduction to Special Issue on 'Negotiations and Cooperative Arrangements in Industrial Organization,'" (with Roman Inderst) *International Journal of Industrial Organization*, Vol.25, No.5, October 2007, pp.879-883.
36. "Do Voluntary Carbon Offsets Work?" *The Economists' Voice*, Vol.4, Iss.4, 2007, Article 7.
37. "Minding the Shop: The Case of Obstetrics Conferences," (with Andrew Leigh and Elena Varganova), *Social Science and Medicine*, Vol.65, No.7, October 2007, pp.1458-1465.
38. "Price Discrimination with Costless Arbitrage," (with Stephen King), *International Journal of Industrial Organization*, Vol.25, 2007, pp.431-440.
39. "Vertical Contracting when Competition for Orders Precedes Procurement," *Journal of Industrial Economics*, Vol.55, No.2, June 2007, pp.325-346.
40. "Inefficient Ownership and Resale Opportunities," *Economics Letters*, Vol.93, 2006, pp.242-247.
41. "Patent Length and the Timing of Innovative Activity," (with Stephen King) *Journal of Industrial Economics*, Vol.55, No.4, December 2007, pp.772-772.
42. "Did the Death of Australian Inheritance Taxes Affect Deaths?" (with Andrew Leigh) *Topics in Economic Analysis and Policy*, Vol.6, No.1, 2006, Article 23.
43. "Toying with Death and Taxes: Some Lessons from Down Under," (with Andrew Leigh) *The Economists' Voice*, Vol.3, Issue 6, 2006.
44. "Paying for Loyalty: Product Bundling in Oligopoly," (with Stephen King) *Journal of Industrial Economics*, Vol.54, No.1, March 2006, pp.43-62.
45. "Vertical Integration in the Presence of Upstream Competition," (with Catherine de Fontenay) *RAND Journal of Economics*, 36 (3), 2005, pp.544-572.
46. "Markets for Ownership," *RAND Journal of Economics*, 36 (2), 2005, pp.433-455.
47. "Optional Fixed Fees in Multilateral Vertical Relations," (with Catherine de Fontenay) *Economics Letters*, Vol.88 (2), 2005, pp.184-189
48. "Patent Renewal Fees and Self-Funded Patent Offices," (with Stephen King and Ryan Lampe), *Topics in Theoretical Economics*, Vol.4, No.1, 2004, Article 6.
49. "Vertical Integration and Competition Between Networks," (with Catherine de Fontenay) *Review of Network Economics* Vol.4 (No.1), March 2005, pp.4-18.
50. "Can Vertical Integration by a Monopsonist Harm Consumer Welfare?" (with Catherine de Fontenay), *International Journal of Industrial Organization*, Vol. 22, No. 6, 2004, pp. 821-834.
51. "When Does Funding Research by Smaller Firms Bear Fruit? Evidence from the SBIR Program," (with Scott Stern), *Economics of Innovation and New Technology*, Vol.12, No.4, 2003, pp.361-384.
52. "A Technological and Organisational Explanation for the Size Distribution of Firms," (with John Quiggin) *Small Business Economics*, Vol.21, No.3, November 2003, pp. 243-256.
53. "Approaches to Regulating Interchange Fees in Payment Systems," (with Stephen King) *Review of Network Economics*, Vol.2, No.2, June 2003, pp.125-145.
54. "The Product Market and the Market for 'Ideas': Commercialization Strategies for Technology Entrepreneurs," (with Scott Stern), *Research Policy*, Vol.32, No.2, February, 2003, pp.333-350.
55. "Organizational Design and Technology Choice under Intrafirm Bargaining," (with Catherine de Fontenay), *American Economic Review*, Vol.93, No.1, March 2003, pp.448-455.

56. "The Neutrality of Interchange Fees in Payment Systems," (with Stephen King), *Topics in Economic Analysis and Policy*, Vol.3, No.1, 2003, Article 1.
57. "When Does Start-Up Innovation Spur the Gale of Creative Destruction?" (with David Hsu and Scott Stern), *RAND Journal of Economics*, Vol.33, No.4, 2002, pp.571-586.
58. "Exclusionary Contracts and Competition for Large Buyers," *International Journal of Industrial Organization*, Vol.20, 2002, pp.1363-1381.
59. "Regulating Private Infrastructure Investment: Optimal Pricing for Access to Essential Facilities," *Journal of Regulatory Economics*, Vol.20, No.2, 2001, pp.167-189.
60. "Numbers to the People: Regulation, Ownership and Local Number Portability," (with Stephen King and Graeme Woodbridge), *Information Economics and Policy*, 13 (2), June 2001, pp.167-180.
61. "Using 'Bill and Keep' Interconnect Arrangements to Soften Network Competition," (with Stephen King) *Economic Letters*, 71 (3), June 2001, pp.413-420.
62. "Regulating Endogenous Customer Switching Costs," (with Stephen King), *Contributions to Theoretical Economics*, Vol 1, Issue 1, 2001, Article 1.
63. "Mobile Network Competition, Customer Ignorance and Fixed-to-Mobile Call Prices," (with Stephen King), *Information Economics and Policy*, Vol.12, No.4, 2000, pp.301-328.
64. "Incumbency and R&D Incentives: Licensing the Gale of Creative Destruction," (with Scott Stern), *Journal of Economics and Management Strategy*, Vol.9, No.4, 2000, pp.485-511.
65. "Network Competition and Consumer Churn," *Information Economics and Policy*, Vol.12, No.2, 2000, pp.97-110.
66. "First Author Conditions," (with Maxim Engers, Simon Grant and Stephen King), *Journal of Political Economy*, Vol. 107, No.4, August 1999, pp.859-883.
67. "Limited Information, the Possibility of Rational Choice and the Contingent Valuation Method," *International Journal of Social Economics*, Vol.26, Nos.1/2/3, 1999, pp.402-414.
68. "Why Referees Don't Get Paid (Enough)," (with Maxim Engers), *American Economic Review*, Vol.88, No.5, December, 1998, pp.1341-1349.
69. "Industrialization with a Menu of Technologies: Appropriate Technologies and the "Big Push," *Structural Change and Economic Dynamics*, Vol.9, No.3, September 1998, pp.63-78.
70. "Time Lags and Indicative Planning in a Dynamic Model of Industrialisation," *Journal of the Japanese and International Economies*, Vol.12, 1998, pp.103-130.
71. "Fixed Cost Assumptions in Industrialization Theories," *Economic Letters*, Vol.56, 1997, pp.111-119.
72. "Measuring Product Diversity," (with Robert Hill), *Economic Letters*, Vol.55, No.1, 1997, pp.145-150.
73. "Urban Productivity and Factor Growth in the Late Nineteenth Century" (with Raphael Bostic and Scott Stern), *Journal of Urban Economics*, Vol.41, No.1 January 1997, pp.38-55.
74. "On the Impossibility of Rational Choice Under Incomplete Information," *Journal of Economic Behavior and Organization*, Vol.29, No.2, March 1996, pp.287-309.
75. "Majority Voting With Single-Crossing Preferences," (with Michael Smart) *Journal of Public Economics*, 58 (1), February 1996, pp.219-238.
76. "Best Replies and Adaptive Learning," *Mathematical Social Sciences*, Vol.30, No.3, 1995, pp.221-234.
77. "Evolutionary Selection of Beliefs," *Economic Letters*, Vol.49, No.1, July 1995, pp.13-17.
78. "How Are The Mighty Fallen: Rejected Classic Articles By Leading Economists," (with George Shepherd), *Journal of Economic Perspectives*, Vol.8, No.1, Winter 1994, pp.165-179.
79. "Time and Economics: Reflections on Hawking," *Methodus,* Vol.2, No.2, December 1990, pp. 80-81.
80. "Knowledge of Growth and the Growth of Knowledge," *Information Economics and Policy*, Vol.4, No.3, 1989-90, pp.201-224.

Local

1. "Beware Business Fads: Disruptive Innovation and Competition Policy," *Canadian Competition Law Review*, Vol.29, No.1, 2016, pp.28-40.
2. "Bargaining Over Labour: Do Patients have any Power?" (with Andrew Leigh), *Economic Record*, Vol.88, No.281, June 2012, pp.182-194.
3. "How Partisan is the Press: Multiple Measures of Media Slant" (with Andrew Leigh), *Economic Record*, Volume 88, Issue 280, pages 127–147, March 2012.

1. "'Big Bang' Telecommunications Reform," (with Stephen King), *Australian Economic Review*, Vol.43, No.2, 2010, pp.179-186.
2. "Using Markets in Innovation Policy," *Australian Economic Review*, Vol.42, No.1, 2008, pp.88-95.
3. "The delicate balance on parental leave," *Melbourne Review*, Vol.4, No.2, November 2008, pp.47-55.
4. "Where to next on credit card reforms?" (with Stephen King) *The Melbourne Review*, 4(1), May 2008, pp.42-48.
5. "The practicalities of emissions trading," (with John Quiggin) *The Melbourne Review*, 3(2), November 2007, pp.60-65.
6. "Looking Local on Broadband," *Public Policy*, Vol.2, No.1, 2007, pp.10-24.
7. "Unusual Days in Births and Deaths," (with Andrew Leigh), *The Melbourne Review*, 3(1), May 2007, pp.72-79.
8. "What is Different about Media Mergers," (with Simon Anderson), *Melbourne Review of Business and Public Policy*, Vol.2, No.2, November 2006, pp.32-36.
9. "Measuring innovative performance – essential for effective innovation policy and economic growth," (with Richard Hayes), *Melbourne Review of Business and Public Policy*, Vol.2, No.1, May 2006, pp.70-77.
10. "Reconsidering the Public Benefit Test in Merger Analysis: The Role of 'Pass Through'," *Australian Business Law Review*, 34 (1), 2006, pp.28-37.
11. "Dealing with difficult mergers," *Melbourne Review of Business and Public Policy*, Vol.1, No.1, November 2005, pp.78-82.
12. "'Protecting Consumers by Protecting Competition': Does Behavioural Economics Support this Contention?," *Competition and Consumer Law Journal,* 13 (1), 2006, pp.40-50.
13. "Competitive Neutrality in Access Pricing," (with Stephen King) *Australian Economic Review*, Vol.38, No.2, 2005, pp.128-136.
14. "Potential Anticompetitive Effects of Bundling," (with Stephen King) *Australian Business Law Review*, Vol.33, No.1, February, 2005, pp.29-35.
15. "Intellectual Property Rights: a Grant of Monopoly or an Aid to Competition," (with Philip Williams and David Briggs) *Australian Economic Review*, Vol.37, No.4, December 2004, pp.436-445.
16. "Taking into Account Extraordinary Circumstances in Regulatory Pricing," (with Stephen King), *Agenda*, Vol.11, No.4, 2004, pp.349-362.
17. "Supermarkets and Shopper Dockets: The Australian Experience," (with Stephen King) *Australian Economic Review*, Vol.37, No.3, pp.311-316.
18. "Does Australia's Health Insurance System Really Provide Insurance?" *Policy*, Vol.20, No.3, Spring 2004, pp.10-14.
19. "When are Regulated Access Prices Competitively Neutral? The Case of Telecommunications in Australia," (with Stephen King), *Australian Business Law Review*, Vol.32, No.6, pp.407-414.
20. "The Decision of the High Court in Rural Press: How the literature on credible threats may have materially facilitated a better decision," (with Rajat Sood and Philip Williams) *Australian Business Law Review*, 32 (5), October, 2004, pp.337-344.
21. "The Housing Lifeline: A Policy for Short-Run Housing Affordability," (with Stephen King) *Agenda*, Vol.11, No.2, 2004.
22. "Structural and Behavioural Market Power under the Trade Practices Act: An Application to Predatory Pricing," (with Anthony Niblett and Stephen King) *Australian Business Law Review*, Vol.32, No.2 April, 2004, pp.83-110.
23. "The Value of IP Protection in Markets for Ideas," *Australian Intellectual Property Law Bulletin*, Vol.16, No.6, 2003, pp.88-90.
24. "Contestability, Complementary Inputs and Contracting: The Case of Harbour Towage," (with Stephen King), *Australian Economic Review*, Vol.36, No.4, December 2003, pp.415-427.
25. "Access Holidays and the Timing of Infrastructure Investment," *Economic Record*, Vol.80, No.248, March 2004, pp.89-100.
26. "Anti-Insurance: Analysing the Health Insurance System in Australia," (with Stephen King), *Economic Record*, Vol.79, No.248, December 2003, pp.473-486.
27. "Access Holidays for Network Investment," (with Stephen King), *Agenda*, Vol.10, No.2, 2003, pp.163-178.

28. "A Theoretical Analysis of Credit Card Reform in Australia" (with Stephen King), *Economic Record* Vol.79, No.247, December 2003, pp.462-472.
29. "Regulating Termination Charges for Telecommunications Networks," (with Stephen King), *Australian Journal of Management*, Vol.27, No.1, June 2002, pp.75-86.
30. "The Economic Consequences of DVD Regional Restrictions," (with Emily Dunt and Stephen King), *Economic Papers*, Vol.21, No.1, 2002, pp.32-45.
31. "The Treatment of Natural Monopolies under the Australian Trade Practices Act: Three Recent Decisions," (with Frances Hanks and Philip Williams), *Australian Business Law Review*, Vol.29, No.6, December, 2001, pp.492-507.
32. "The Role of Interchange Fees in Credit Card Associations: Competitive Analysis and Regulatory Options," (with Stephen King), *Australian Business Law Review*, Vol.29., No.2, April 2001, pp.94-122.
33. "Benefits and Costs of Copyright: An Economic Perspective - Part 2," (with Megan Richardson, Frances Hanks and Philip Williams) *Australian Intellectual Property Law Bulletin*, Vol.13, No.6, 2000, pp.79-92.
34. "Benefits and Costs of Copyright: An Economic Perspective," (with Megan Richardson, Frances Hanks and Philip Williams) *Australian Intellectual Property Law Bulletin*, Vol.13, No.5, 2000, pp.62-65.
35. "Options for Electricity Transmission Regulation in Australia," (with Stephen King), *Australian Economic Review*, Vol.33, No. 2, June 2000, pp.145-161.
36. "The Competitive Balance Argument for Mergers," *Australian Economic Review*, Vol.33, No.1, March 2000, pp.83-93.
37. "The Role of Undertakings in Regulatory Decision-Making" (with Teresa Fels and Stephen King), *Australian Economic Review*, Vol.33, No.1, March 2000, pp.3-16.
38. "Economic Issues Associated with Access to Electronic Payments Systems," (with Richard Scheelings) *Australian Business Law Review*, Vol.27, No.5, December 1999, pp.373-390.
39. "Efficient Investment Pricing Rules and Access Regulation" (with Philip Williams), *Australian Business Law Review*, Vol.27, No.3, August 1999, pp.267-279.
40. "Growth in Australian Cities," (with Rebecca Bradley), *Economic Record*, Vol.74, No.226, September, 1998, pp.266-278.
41. "Contracts and Electricity Pool Prices," (with Danny Price and Kim Woods), *Australian Journal of Management*, Vol.23, No.1, June, 1998, pp.83-96.
42. "Driving the Hard Bargain for Australian R&D," *Prometheus*, Vol.16, No.1, March, 1998, pp.47-56.
43. "Access Regulation and the Timing of Infrastructure Investment," (with Philip Williams), *Economic Record*, Vol.75, No.228, March 1999, pp.39-49.
44. "Does Australia Really Need to Encourage its Innovators to Commercialise In-House?" *Policy*, Vol.13, No.4, March 1998, pp.36-40.
45. "Of Grand Prix and Circuses," *Australian Economic Review*, No.155, 3rd Quarter 1996, pp.299-307.
46. "Comparative Statics Made Simple: An Introduction to Recent Advances," *Australian Economic Papers*, June 1996, pp.81-93.
47. "Inside the Black Box: A Look at the Container," *Prometheus*, Vol.13, No.2, December 1995, pp.169-183.
48. "Chaos Theory, Nonlinearities and Economics: A Speculative Note," *Economic Papers*, Vol.10, No.1, March 1991, pp.40-53.

Book Chapters

1. "Some Economics of Pure Digital Currencies," (with Hanna Halaburda), Economics of Digitization: An Agenda, A. Goldfarb, S. Greenstein and C. Tucker (eds), NBER, 2015, Chapter 9.
2. "Credit History: The Changing Nature of Scientific Credit" (with Fiona Murray), in A. Jaffe and B. Jones (eds), The Changing Frontier, NBER, 2015, Chapter 4.
3. "Intel and Blocking Practices," *The Antitrust Revolution*, 6th ed., J. Kwoka and L. White (eds)., 2013 (forthcoming).
4. "Nash Equilibrium," *Palgrave Encyclopedia of Strategic Management* (forthcoming).
5. "Natural Monopoly," *Palgrave Encyclopedia of Strategic Management* (forthcoming).
6. "Funding Scientific Knowledge: Selection, Disclosure and the Public-Private Portfolio," (with Fiona Murray) *Rate and Direction of Inventive Activity*, J. Lerner and S. Stern (eds), NBER, 2012 , Chpt 4.

7. "Regulating Interconnection Pricing," (with Richard Hayes and Stephen King), *Australian Telecommunications Regulation*, A. Grant (ed.), CCH: Sydney, 2012.
8. "Designing Markets for Ideas," (with Scott Stern) in *The Handbook of Market Design* (Edited by Zvika Neeman, Muriel Niederle, Nir Vulkan, and Al Roth), Oxford University Press, 2011
9. "Economic Approaches to Understanding and Promoting Innovation," in L. Mann and J. Chan (eds), *Creativity and Innovation in Business and Beyond*, Routledge: London, 2010, pp.82-104.
10. "Managing Ideas: Commercialization Strategies for Biotechnology," in C. Sri Krishna (ed.), *IPR and Commercialization: Economic Issues and Implications*, Amicus Books, Hyderabad, 2007, Chapter 6.
11. "Monopolistic Competition," *International Encyclopedia of Social Science*, (forthcoming).
12. "Housing and Income Contingent Loans for Low Income Households," (with Stephen King) *Managing Government Risk: Income contingent loans for social and economic progress*, Bruce Chapman (ed.), Routledge: London, 2006, Chapter 11.
13. "Access Pricing and Infrastructure Investment," in Dewenter, Ralf and Haucap, Justus (eds.) *Access Pricing: Theory and Practice*, Elsevier Science, Amsterdam, 2007, Chpt 2.
14. "Wireless Communications," (with Stephen King and Julian Wright) *Handbook of Telecommunications Economics*, North-Holland, 2005.
15. "Regulating Interconnection Pricing," (with Stephen King), *Australian Telecommunications Regulation*, A. Grant (ed.), UNSW Press: Sydney, 2003.
16. "Innovation and Market Structure in General Equilibrium," (with Robin Stonecash), in A. Woodland (ed.), *International Trade and Economic Theory: Essays in Honor of Murray Kemp*, Edward Elgar: Cheltnam, 2001, pp.181-191.
17. "Engendering Change," in S. Keen et.al. (eds.), *Commerce, Complexity, and Evolution*, Cambridge University Press: New York, 2000, Chpt 19, pp.391-414.
18. "A Strategic Theory of In-House Research and Development," in S. MacDonald and J. Nightingale (eds.), *Information and Organization*, Elsevier: Amsterdam, 1999, pp.167-182.
19. "A Primer on Access Regulation and Investment" (with Philip Williams), in M. Arblaster and M. Jamison (eds.), *Infrastructure Regulation and Market Reform: Principles and Practice*, ACCC/PURC: Melbourne, 1998, pp.150-160.
20. "Industrialisation Policy and the Big Push," in K.J. Arrow et.al. (eds.) *Increasing Returns and Economic Analysis*, Macmillan: London, 1998, Chpt 13.

Other Working Papers

1. "When Will Efficient Ownership Arise? Trading over Property Rights" 31st March, 2005
2. "Intrafirm Bargaining with Heterogeneous Replacement Workers" (with Catherine de Fontenay) June, 2005
3. "The Dynamics of Intellectual Property Practices" September, 2005
4. "The Economics of User-Based Innovation" (with Scott Stern) October, 1998
5. "Has Investment in Start-Up Firms Driven Incumbent Innovative Strategy? Evidence from Semiconductor and Biotechnology Venture Capital Funded Firms" (with Setio Anggoro Dewo and Joseph Hirschberg) July 2005
6. "Options for Housing Policy for Low Income Households," (with Stephen King), *Working Paper*, Menzies Research Centre, 2003.
7. "Assessing Australia's Innovative Capacity in the 21st Century," (with Scott Stern), *Working Paper*, MBS.
8. "Incentive Contracts, Optimal Penalties and Enforcement," Working Paper, No.6, MBS, January 1998.
9. "The Allocation of Decisions in Organizations," (with Susan Athey, Scott Schaefer and Scott Stern) *Discussion Paper*, No.1322, Graduate School of Business, Stanford University, October 1994.
10. "Monopolistic Competition a la Dixit and Stiglitz (and its Applications)," *Working Paper*, No.9409, Department of Economics, University of New South Wales, October 1994.
11. "The Cyclical Responsiveness of Shifts in Employment Over Sectors," (with Roberto Mazzoleni), *Quaderni Dell'Istituteo Di Scienze Economiche e Finanziarie*, No.15, Universita Degli Studi Di Cagliari Sacolta Di Scienze Politiche, January 1993, 19pp.

Blog Contributions

Digitopoly: digitopoly.org

Parentonomics: blogs.forbes.com/joshuagans
Core Economics: economics.com.au
Game Theorist: gametheorist.blogspot.com
News for Econ Students: econblog.aplia.com

Other Professional Activities

Executive Committee, Strategic Research Initiative (2012 – 2013, 2015-)
Associate Editor, *Management Science* (Strategy) (2010 -)
Associate Editor, *Journal of Industrial Economics* (2009 -)
Co-Editor, *International Journal of Industrial Organization* (2005 - 2011)
Co-Editor, *Journal of Economics and Management Strategy* (2003 - 2008)
Board of Editors, *Review of Network Economics* (2009 -)
Board of Editors, *Economic Analysis and Policy* (2007 - 2012)
Board of Editors, *Games* (2009 -)
Economics Editor, *Australian Journal of Management* (1997 - 2003)
Board of Editors, *Information Economics and Policy* (1996 - 2004).
Board of Editors, *BE Journals of Economic Analysis and Policy* (2001 -)
Book Review Editor (Microeconomics) for the *Economic Record* (1996 - 1998)
Executive Committee Member, Institute for a Broadband-Enabled Society, University of Melbourne
Professional Memberships: Economic Society of Australia, American Economic Association, Econometric Society, Law Council of Australia (Business Law Section)

PUBLIC VERSION

Before the

COPYRIGHT ROYALTY BOARD

LIBRARY OF CONGRESS

Washington, D.C.

In the Matter of:

DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)

Docket No. 16–CRB–0003–PR (2018– 2022)

WRITTEN REBUTTAL TESTIMONY

OF

Joshua Gans

ON BEHALF OF
COPYRIGHT OWNERS

February 13, 2017

TABLE OF CONTENTS

page

I. ASSIGNMENT AND QUALIFICATIONS

A. ASSIGNMENT

1. I have been retained by counsel for the National Music Publishers' Association ("NMPA") and Nashville Songwriters Association International ("NSAI") (together, the "Copyright Owners") in connection with this rebuttal report to respond to arguments made by participants in this proceeding as described below. As part of my analysis, I have been asked in particular to evaluate the Shapley value analysis performed by Dr. Marx in her direct testimony.

2. The materials I relied upon in developing my analysis and opinions are listed in Appendix B.

B. QUALIFICATIONS

3. I am a Professor of Strategic Management and holder of the Jeffrey S. Skoll Chair of Technical Innovation and Entrepreneurship at the Rotman School of Management, University of Toronto. I am a Research Associate, National Bureau for Economic Research and a Research Fellow, Center for Digital Business, Sloan School of Management, Massachusetts Institute of Technology. I am also the Chief Economist at the University of Toronto's Creative Destruction Lab, a highly successful incubator for technology-based business ventures. I have previously served as a Professor of Management (Information Economics) at the Melbourne School of Business, University of Melbourne, and as a visiting researcher at Microsoft Research (New England).

4. I filed an earlier report in this proceeding[1] (my "direct report") and described my further qualifications in more detail in the introductory section. The full range of cases on which I have provided expert advice and testimony are listed in my CV, which was attached to my direct report.

---

[1] Written Direct Testimony of Joshua Gans, Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-003-PR (2018-2022), October 31, 2016, ("Gans Report"), at 1-3.

II. INTRODUCTION

5. In her direct statement,[2] Dr. Marx presents an analysis of royalty rates based on Shapley values.[3] In my direct statement, I also present an analysis based on Shapley values,[4] which produces a different range of royalty rate estimates than those produced by Dr. Marx's analysis. I have carefully examined Dr. Marx's analysis in order to reconcile our two approaches. In this statement, I will discuss the conceptual differences between our two approaches and the set of assumptions that cause our results to diverge. I will then show the effects that Dr. Marx's assumptions have on her calculations of a royalty rate. Finally, I recalculate Dr. Marx's model using a more realistic set of assumptions, and show that our results converge on values close to my original estimates. I summarize my analysis and opinions below.

III. SUMMARY OF OPINIONS

6. The use of Shapley value analysis to estimate interactive streaming royalty rates for musical works by experts on opposite sides of this proceeding is a reflection of the suitability of this approach to the problem at hand. Although the two analyses differ in the details of their implementation, once the principal and materially different input assumptions are reconciled, they produce consistent results.

7. Dr. Marx and I both recognize that the Shapley approach is particularly relevant given the policy objective of "afford[ing] the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions."[5] Shapley analysis offers a framework for determining how to set royalty rates with the aim of achieving the "fair" allocation of the gains (*i.e.* producer profits or "surplus") from licensing musical works between the rightsholders (*i.e.* publishers and labels) and users, given by each participant's

---

[2] Written Direct Testimony of Leslie M. Marx, Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-003-PR (2018-2022), November 1, 2016, ("Marx Report"), at 50-57.

[3] For a description of Shapley values, see Exhibit 1 in Gans Report, October 31, 2016.

[4] Gans Report, at 32-46.

[5] 17 U.S.C. § 801(b)(1) (2010)(B).

so-called Shapley value. We also share a common appreciation for the importance of the principle of business model neutrality in advancing fairness in regulatory rate proceedings. This is a principle consistent with the Shapley approach, which is entirely agnostic as to the business design and practices the parties use to contribute to the surplus that is allocated among market participants based on Shapley values.[6]

8. Having reconciled the two approaches, I stand by the finding that the royalty rate proposed by the Copyright Owners is reasonable in light of the rates expected to prevail in a fair market unconstrained by compulsory licensing and meeting the 801(b) policy objectives.

9. In particular, my comparison and reconciliation of the results of Dr. Marx's Shapley analysis confirm the following opinions:

   - The Shapley model of negotiations between independent entities with a shared interest in a common enterprise can be used to explain and predict the pricing of freely negotiated licenses for the distribution of music via interactive streaming services.
   - The fact that musical works and sound recordings licenses are essential inputs to any interactive streaming service means publishers and labels have equal veto power in the negotiations modeled using Shapley value analysis. It follows that they would earn equal profits from their respective licenses. Dr. Marx's analysis (like my original analysis) reaches this conclusion.
   - The results of a Shapley analysis depend critically on the estimates of entity profits (surplus). The interactive music streaming industry is growing rapidly, and historical profit margins are not expected to capture future profit margins ([redacted]). As service revenues increase, non-content costs do not increase proportionally, a feature of both economies of scale and an expected reduction of costs spent fighting for market share. This results in higher Shapley values and a higher percentage of revenues to be paid out as royalties for Copyright Owners in a Shapley model.
   - Dr. Marx biases her estimates of publisher royalties downwards through oversimplifying her model by using a single "representative" service and single "representative" rightsholder.
   - Adjusting Dr. Marx's analysis to properly model the players (including multiple services and separate rights owners) and estimate relevant revenues and costs for the

---

[6] Shapley values are the average incremental contributions to the joint surplus of the cooperative enterprise at issue, in this case interactive streaming, across all possible permutations of voluntary coalitions among the participating entities.

time period to be covered by the rates in this proceeding brings her results close to those in my direct report and consistent with the corroborating market benchmarks.

- While Dr. Marx's approach of including other downstream competitors aside from non-interactive services and her exclusion of upstream content costs differ from my approach, these differences turn out to be less material. The model supports my conclusions under either scenario.
- Applying Dr. Marx's analysis with appropriate inputs, while holding musical works royalties at the existing statutory rate, predicts sound recording royalty rates in line with [redacted]. This is a robustness check demonstrating that the proper Shapley analysis is (as expected) consistent with market outcomes. It further allows me to adjust Dr. Marx's model so that it passes a market validation test, and then use the adjusted version to estimate fair musical works per-play and per-user royalty rates. The resulting rates estimated by the Shapley model exceed those proposed by the Copyright Owners, indicating that the Copyright Owners' proposed rates are more than reasonable for the services.

IV. DR. MARX'S ANALYSIS ADMITS SEVERAL IMPORTANT POINTS FOR MODELING MARKET BEHAVIOR AND OUTCOMES OF LICENSING MUSIC TO INTERACTIVE STREAMING SERVICES

A. THE SHAPLEY MODEL OF MARKET COMPETITION IS WELL SUITED TO ANALYZE THE INTERACTIVE STREAMING MARKET

10. Shapley value analysis is an approach to modeling the negotiation of the terms of participation in a joint enterprise (in this case the interactive streaming business) that results in a fair allocation of the economic gains (surplus) among the parties. Because of its well-known fairness property, Dr. Marx and I have both recognized the usefulness of Shapley values in determining royalty rates which are consistent with the objective of providing a "fair return" for rightsholders and "a fair income under existing economic conditions" for copyright users.[7] We have also both recognized that not artificially favoring or disfavoring certain forms of distribution over others is important for fairness and economic efficiency.[8] I

---

[7] 17 U.S.C. § 801(b)(1) (2010)(B).

[8] Dr. Marx noted in her report the importance that "the statutory royalty rate structure does not create artificially favored or disfavored forms of distribution that are out of line with underlying demand." Marx Report, at 41. In her deposition, Dr. Marx stated that [redacted]

Continued on next page

referred to this concept in my direct report as the principle of business model neutrality.[9] The Shapley approach is consistent with this principle because the determination of each market participants' Shapley value, which sets their share of profits, is determined based on economic contribution irrespective of the form of distribution, market segment, or other differences in their business practices.

11. There is broad agreement that Shapley value analysis ("Shapley analysis") is useful in estimating royalty rates that represent a fair outcome of negotiations in a market without compulsory licensing. I explained in my direct report how the Shapley approach to modeling market competition as a cooperative game[10] applies well to this setting in which labels, publishers, and services choose independently to participate in the interactive streaming business. I also provided illustrations of how the method is implemented by considering all possible permutations of coalitions of participants and the contributions each entity makes to each coalition.[11] The usefulness of Shapley analysis in the determination of royalty rates has also been noted by experts for the music services in this proceeding, prior CRB decisions, and in academic research. For example, Dr. Marx—expert witness for Spotify—writes, "[t]he Shapley value reflects the fairness requirements of the 801(b) factors in the sense that every entity's payoff is determined by its average marginal payoffs under alternative arrangements—a measure of its relative contribution to the joint surplus. It provides a comparison to a hypothetical market with a 'fair' allocation of surplus."[12]

12. Dr. Katz—expert witness for Pandora—recognizes that "[t]he Shapley value provides an answer to the question of how to divide […] the overall profits available when some parties

---

Continued from previous page

[redacted] **CO EX. R-183**, Transcript of the January 20, 2017 Deposition of Dr. Leslie Marx ("Marx Deposition"), at 48:5-19.

9 Gans Report, at 28-29.

10 Economists refer to models of the interaction between competitors and to simulate certain market activity as games. The branch of economics in which such models are the focus is called game theory.

11 Gans Report Exhibit 1, at 1-2.

12 Marx Report, at 50.

license their intellectual property to others."[13] Dr. Katz also points out that "the Shapley value is a well-known (among economists) conception of fairness."[14]

13. Shapley values have also been recognized by the Copyright Royalty Board (CRB) as an important tool for the allocation of profits and determination of royalty rates. A 2015 CRB judgment pertaining to the distribution of royalties from cable operators to content producers reads, "[…] the Judges believe that the optimal approach to determining relative market value would have been to compare the SDC [Settling Devotional Claimants] programs with those of IPG [Independent Producers Group] using Shapley or Shapley-approximate valuations."[15] Additionally, I have myself previously advised regulators on the usefulness of the Shapley value framework.[16]

14. Moreover, using Shapley values in the specific context of determining music royalty rates has been the subject of academic inquiry. For example, in 2010, Dr. Richard Watt published an analysis of copyright valuation methods in the realm of broadcast radio. In that article, Dr. Watt wrote, "[i]n searching for a truly fair and equitable sharing rule, the Shapley methodology has been suggested [by this analysis] as a strong candidate."[17] I understand from counsel that Dr. Watt will be providing testimony in this proceeding addressing Shapley analysis. To be informative, Shapley analysis must be applied appropriately and the underlying estimates of the relevant economic costs, revenues and surplus of the market participants must be carefully determined.

---

[13] Written Direct Statement of Michael L. Katz, Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-003-PR (2018-2022), November 1, 2016 ("Katz Report"), at 17-18.

[14] Katz Report, at 19.

[15] Copyright Royalty Board, "Distribution of 1998 and 1999 Cable Royalty Funds," Docket No. 2008-1 CRB CD 98-99 (Phase II), 2015.

[16] I provided expert witness advice to the ACCC on an Australian Copyright Tribunal dispute involving Fitness Australia and PCMA (May 2007 – April 2009).

[17] Richard Watt, "Fair Copyright Remuneration: The Case of Music Radio," *Review of Economic Research on Copyright Issues* 7, no. 2 (2010): at 21-37, accessed September 16, 2016, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1737449 (Watt 2010).

B. RIGHTSHOLDERS ARE VETO PLAYERS; THEREFORE, SOUND RECORDING AND MUSICAL WORKS RIGHTSHOLDERS HAVE THE SAME SHAPLEY VALUE

15. Dr. Marx appropriately recognizes that sound recording rightsholders and musical works rightsholders are veto players[18] in the context of the Shapley cooperative game model of competition, in which: "[…] both sound recording copyright holders and musical [works] copyright holders must be active in order to create value […]."[19] Musical works and sound recording licenses are equally necessary for the distribution of music, and so the two licensors have the same Shapley value. Dr. Marx demonstrates this relationship exists between musical works and sound recording rightsholders in her own Shapley analysis (in her "Alternative model").[20]

16. The concept of publishers and labels as veto players is significant because it allows one to make uncomplicated comparisons between sound recording rightsholders and musical works rightsholders. The relevant result that can be drawn from this relationship is that the Shapley values of the two types of rightsholders are equivalent. This equivalence is reaffirmed by Dr. Marx's analysis.[21] This result was also a part of the basis for the Shapley value-based analysis in my direct statement.[22]

17. Having the same Shapley value means labels and publishers earn the same profit. The corresponding royalties that achieve this outcome must be higher than the Shapley values in order to recover publisher's and label's costs. Differences in these costs, as well as the overall level of profits in the market, determine the level of royalties.

---

[18] A 'veto player', is any entity that must be present in a coalition in order for that coalition to be successful or profitable. Rightsholders are veto players because their work cannot be distributed without their consent (assuming no compulsory licensing). Streaming services are not veto players because rightsholders could simply distribute their work through alternate channels should services choose not to cooperate.

[19] Marx Report, at 57.

[20] Marx Report, at B-7-B-8.

[21] *See* Figure 33, column 5. Marx Report, at B-8.

[22] Gans Report, at 32-46.

C. THE EXPECTED RATIO OF SOUND RECORDING TO MUSICAL WORKS ROYALTIES FROM DR. MARX'S ANALYSIS IS SIMILAR TO THE RATIO COMPUTED IN MY ORIGINAL ANALYSIS

18. Dr. Marx's calculations make it clear that the current ratio between sound recording and musical works royalties for interactive music streaming (which is approximated to be [redacted]) is too high, indicating that the Copyright Owners do not receive fair compensation under the current compulsory licensing regime. The Shapley value-based royalties that she presents in Figure 33 imply a sound recording to musical works ratio of about [redacted].[23] Dr. Eisenach's benchmarking analysis also produces a ratio of about [redacted].[24] My own Shapley value-based analysis produced an even lower ratio of [redacted].[25] Despite the slight differences in the ratios derived from these analyses, a common theme persists—the current ratio is too high. Since the sound recording rightsholders negotiate in a free market while musical works have a compulsory rate, a straightforward economic approach points us to look at the compulsory rate for an explanation of the skewed ratio. The Shapley analysis fully and logically explains the common sense conclusion that the compulsory rate is holding down royalties for musical works from a fair royalty rate, producing a skewed ratio of royalty payments.

19. Dr. Marx uses her Shapley analysis to estimate a fair allocation of royalties for the use of musical works and sound recordings without first validating her model by testing whether it accurately reflects the way the market actually works. When I do so (in Section VII) by comparing model estimates to observed market evidence, Dr. Marx's model fails the test and reveals the need to correct key input assumptions before using the model to estimate the fair division of royalties that would result in a free market. One simple example of the mismatch between the results produced by Dr. Marx's analysis and market evidence is that Dr. Marx's estimate of royalty rates for combined sound recording and musical works are below [redacted]. The need for corrections to Dr.

---

[23] See Figure 33, column 10 and 11. Marx Report, at B-8.

[24] Written Direct Statement of Jeffrey A. Eisenach, Determination of royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-003-PR (2018-2022), October 31, 2016 ("Eisenach Report"), at 77.

[25] Gans Report, at 40.

Marx's model is also evident from certain invalid assumptions she makes about relevant revenues and costs, and oversimplifications of the model that bias her results. When these issues are corrected, the model in fact lines up well with real world results, which points to the fact that the compulsory royalty rates for musical works are significantly below expected fair outcomes

20. To summarize, Dr. Marx, Dr. Eisenach, and I all perform analyses concerning the current gap between sound recording and musical works royalties that, when measured against the real world market information, indicate that current musical works royalty rates are significantly too low. This is a fundamental conclusion from the Shapley analyses (performed by Dr. Marx and me), and corroborated by the benchmark analysis (performed by Dr. Eisenach).

D. TREATING SOUND RECORDING AND MUSICAL WORKS RIGHTSHOLDERS AS SEPARATE ENTITIES WITHIN THE SHAPLEY FRAMEWORK INCREASES THEIR SHAPLEY VALUES

21. Treating sound recording and musical works rightsholders as a single entity in a Shapley framework lowers their total Shapley value. In the hypothetical market without compulsory rates for musical works, the institutional structure is such that the two would not jointly negotiate with licensees.[26] Combining entities in the Shapley framework that are, in reality, separate causes a misrepresentation of their bargaining power. If the entities being combined are substitutes for one another–such as alternative music services–then combining them ignores the effects of competition between them, thereby inflating their combined share of surplus from the joint enterprise (*i.e.* their Shapley value). In contrast, if the entities being artificially combined are complements to one another–such as the publishers and labels—then combining them ignores their separate abilities to be hold outs from an otherwise profitable coalition (*i.e.* exercise veto power), and thereby bargain for a higher portion of the shared profit. Hence, combining them, as Dr. Marx does in her "Baseline"[27] model, artificially depresses the Shapley value of musical works rightsholders. This is evident when

---

[26] Indeed, having two separate players in the Shapley game increases their Shapley values, so they would likely not choose to coordinate in this way.

[27] Marx Report, at B-5-B-7.

comparing her "Baseline" model to her "Alternative"[28] model. From Figures 32 and 33 in Dr. Marx's statement,[29] we see that combining the rightsholders in a single "representative" entity [redacted][30]

For this reason, my further analysis of Dr. Marx's Shapley analyses relies exclusively on her "Alternative" model, which requires numerous corrections as explained below, but unlike her other models, appropriately treats rightsholders as separate entities.

V. DR. MARX'S SHAPLEY MODEL UNDERVALUES ROYALTIES WITH HER MODELING CHOICES AND ASSUMPTIONS CONCERNING STREAMING REVENUES AND COSTS

A. DR. MARX CONSTRUCTS A MODEL THAT COMBINES UPSTREAM AND DOWNSTREAM MARKETS AND DEPENDS ON MORE ASSUMPTIONS; HOWEVER, HER ANALYSIS IS NOT CONSISTENT WITH OBSERVED MARKET OUTCOMES, WHICH REVEALS ERRORS IN HER ASSUMPTIONS

22. In this section, I explain the structure of Dr. Marx's Shapley analysis, and in the next section, for further clarification, compare it to my original Shapley analysis described in my direct report. I refer to Dr. Marx's approach as "bottom-up" because she estimates royalty payments by first estimating profits for each entity (Shapley values) and then adding non-content costs, thereby building up a royalty estimate. I refer to my original Shapley analysis a "top-down" approach because it starts with a known market outcome–the average royalty revenue per subscriber derived by labels from streaming services–that is the result of free market negotiations. These two approaches are described in detail below.

23. Dr. Marx's Shapley analysis produces results that are inconsistent with observed market outcomes due to certain inappropriate modeling assumptions and the use of inappropriate revenue and cost assumptions. However, Dr. Marx's model can also be very useful for this

---

[28] Marx Report, at B-7-B-8.

[29] Marx Report, at B-7-B-8.

[30] First, I calculated the average of column 9 of Figure 32 and the average of column 9 of Figure 33 across all the substitution values. The percent change between the two averages gives the percent change, and their difference gives the percentage point value. Marx Report, at B-7-B-8.

proceeding as a robustness check and a corroborative evaluation. Once Dr. Marx's inappropriate assumptions are corrected, her bottom-up approach produces remarkably similar results to my original top-down Shapley analysis, as well as the benchmark analysis of Dr. Eisenach. Most importantly, all three of these analyses (including Dr. Marx's, when corrected) are consistent with the real-world market outcomes that are produced [redacted].

24. Dr. Marx's "bottom-up" Shapley analysis may be summarized in a series of four compound steps depicted in Figure 1 below. For the purposes of comparison, I note there are structural differences in Dr. Marx's model inherent in the estimation steps. The first of which is her inclusion of non-interactive services and other music distribution channels including radio and physical distribution in her model; the second of which is her explicit estimation of profits of interactive services, which is not necessary in my analysis.

    1. **Develop accounting based non-content cost estimates for the entire recorded music distribution market:** Dr. Marx uses accounting estimates from public financial statements for Warner Music's publishing business and record label and scales these up by estimated market share in order to estimate the non-content costs for the entire market. Dr. Marx uses [redacted] as a basis for the entire interactive streaming market. Dr. Marx uses accounting data from Pandora and Sirius as the basis for non-content costs estimates for all other recorded music distribution channels.
    2. **Estimate aggregate recorded music industry revenues from the downstream market:** data from RIAA is used to estimate the aggregate industry revenue. Deducting aggregate non-content costs from aggregate revenues provides an estimate of aggregate non-content profits that Dr. Marx allocates across entities in her Shapley analysis in the next step.
    3. **Simulate all possible permutations of coalitions among the market participants and their corresponding Shapley values:** for each possible sequence in which entities could choose to join a coalition to participate in the interactive streaming market, the incremental surplus added to the aggregate surplus for all participants is computed for each entity. (Dr. Marx needs to make a series of additional assumptions in order to estimate how the surplus would change in each permutation of the hypothetical market coalitions, including coalitions that exclude all interactive streaming services, and those that exclude all other recording music distribution channels. The changes in surplus estimates are modeled based on arbitrary assumptions concerning the effects of

competition between interactive streaming and other distribution channels;[31] and by assuming non-content costs of these services would scale in proportion to downstream profits.)[32] Each entity's average incremental surplus across all possible coalitions is the Shapley value. The Shapley value is presumed to be the non-content margin earned by each entity in a free market without compulsory statutory rates for music publishers. Note that the publishers and labels earn the same profit.

4. **Add the non-content costs on top of the Shapley values to estimate the revenues needed to produce the Shapley Values for each entity:** after adding back the non-content costs estimated in step 1, an all-in royalty rate and ratio of label to publisher royalties is estimated.

Figure 1: Depiction of Dr. Marx's Shapley Analysis Approach

25. Dr. Marx reports the results of her analysis in ranges that correspond to estimates developed on the basis of alternative assumptions about competition between interactive services and other distribution channels. In Table 1 below, I report the average results across this range of

---

[31] Marx Report, at B-5.

[32] Marx Report, at B-5.

her assumptions. She reports publisher royalties paid by interactive streaming and other channels equal to [redacted] (row [6][A] of Table 1) of total downstream revenues ([4][E] of Table 1). I show in [11][A] how this result is equivalent to an interactive streaming royalty rate of [redacted] as a percent of interactive services downstream revenue.

Table 1: Marx Calculations (in Millions)

[redacted]

Notes:
[1]: Calculated by Dr. Marx.
[2][A], [2][B]: Warner Music 2015 10-K financial statement, scaled up to represent recording and publishing markets.
[2][C]: [redacted], scaled up to represent the interactive streaming market.
[2][D]: Financial statements for Pandora and SiriusXM, scaled to represent all 'other' markets.
[4]: 2015 RIAA Shipment and Revenue Statistics, 2015 Pandora 10-K, and 2015 SiriusXM 10-K.

26. Dr. Marx's approach as a method of estimating royalty rates for interactive streaming is somewhat unconventional because the model includes parties whose participation in the cooperative game is not required to deliver interactive streaming services (*i.e.* music distribution channels other than interactive streaming services). Dr. Marx's model does not simulate interactive streaming royalties, given the existence of other distribution channels, as would be the conventional approach. Instead, her model in effect simulates the joint determination of all recorded music distribution royalties.

27. The additional complexity of Dr. Marx's approach results in the need for more cost and revenue parameter inputs. It also led her to oversimplify her model structure in order to make it feasible to implement. Below, I enumerate those assumptions made by Dr. Marx that I am able to test. Some of Dr. Marx's assumptions are inconsistent with market evidence and

have substantial effects on her predictions. I quantify the effects of correcting the assumptions I have tested in Section V.[33]

(1) Dr. Marx assumes relevant revenues and costs during the statutory period of 2018 to 2022 are properly represented by the selected 2015 numbers that she uses. This assumption is implicit in the fact that Dr. Marx uses selected 2015 financial data in her calculations.[34]

(2) Dr. Marx models the market as if only one large interactive streaming service exists and one alternative channel by which to distribute music to the public exists. By Dr. Marx's inclusion of alternative distribution channels in her model, she implicitly assumes they are involved with the negotiations between publishers, labels, and interactive services.

---

[33] In order to implement her model, Dr. Marx also makes a number of additional assumptions that have not been verified against actual market values or outcomes, but I accept these assumptions for the purpose of this analysis. Even with these assumptions, her adjusted model supports my conclusions. These additional assumptions include:

- Dr. Marx assumes all revenue going to songwriters and artists is profit, and that they incur no costs.
- Dr. Marx makes a range of arbitrary assumptions about the substitutability of her one streaming service and her one alternate channel.
- Dr. Marx assumes Warner Music's cost structure is representative of the entire musical works and sound recording markets.
- Dr. Marx assumes Warner Music's US cost margins are the same as Warner Music's global cost margins.
- Dr. Marx assumes [redacted].
- Dr. Marx assumes the cost structures of Pandora and SiriusXM represent the cost structure of all non-interactive streaming services, all internet radio services, all distributors of physical media, all download services, and terrestrial radio.
- Dr. Marx assumes exactly half of SiriusXM's revenue is generated by music.

[34] A related assumption by Dr. Marx is that [redacted] is representative of the entire interactive streaming market. As noted below, evidence from [redacted] indicates [redacted]. This is exactly what an economic analysis would likely predict, as economies of scale and scope come into play [redacted]. We also see that [redacted].

28. Dr. Marx's bottom-up analysis depends on a long list of unverified assumptions about what the costs and revenue of a service and rightsholders would be in the hypothetical absence of other music distribution channels during the rate-setting period 2018-2022.[35] Having selected estimates of costs, revenues, profits, competitive effects, and various simplifying assumptions concerning the negotiation of licenses for musical works and sound recordings, Dr. Marx does not confirm whether the results from her model are consistent with actual market outcomes being modeled, or explain their divergences. Such a robustness check is useful to validate the model and its implementation. One prediction of hers that appears inconsistent with market observation is that total content royalties would be about [redacted] of service revenue. This is [redacted].[36]

B. FOR COMPARISON, MY ORIGINAL SHAPLEY ANALYSIS MODELS THE UPSTREAM MARKET USING A BASIC PROPERTY OF SHAPLEY VALUES, AVOIDING THE NEED FOR POTENTIALLY DISTORTIONAL ASSUMPTIONS

29. The Shapley analysis in my direct report[37] utilizes known market benchmarks to calibrate the model. It is based on an axiom of the Shapley framework in conjunction with market observations to determine the Shapley value of musical works rightsholders and the corresponding royalty rate. The axiom is that two players who have equal ability to prevent a profitable joint enterprise from forming have equal Shapley values.

30. My top-down Shapley analysis may be summarized in a series of six simple arithmetic steps depicted in Figure 2 below.

---

[35] In those coalitions that only include rightsholders and interactive services, she assumes that the revenue of interactive services will go up by some arbitrary factor and that the non-content costs of rightsholders will decrease proportional to industry-wide revenue.

[36] As Dr. Marx testified: [redacted] Marx Report ¶ 62.

[37] Gans Report, at 32-46.

1. Compare publisher mechanical revenues to label revenues: I use estimates of average label revenues from streaming services from a Goldman Sachs music industry analyst report,[38] and the average prevailing ratio of label to publisher streaming revenue;

2. Compare publisher and label profits: the same Goldman Sachs music industry analyst report provides estimates of the margins earned by publishers and labels;[39]

3. Increase publisher profit to match label profit: using the Shapley symmetry axiom, I determine how much higher publisher profits would have to be to match the profits earned by the labels;

4. Make corresponding increase to mechanical revenue: in order for publishers to earn the additional profits, their revenues (from mechanical royalties) would have to rise by more than that additional profit because most of the additional royalty income is passed onto songwriters. An estimate of the fraction of royalty income passed through to songwriters is also reported in the GS Report. In this step of the calculation, I hold fixed the non-content costs of the publishers.

5. Compute new ratio of publisher revenue to label revenue: the new ratio of label royalty revenue to publisher royalty revenue can now be computed.

6. Use revised ratio to adjust benchmark royalty rate: the benchmark royalty rate for labels is a per-play rate calculated by Dr. Eisenach in his direct report and based on his review of freely negotiated agreements between the labels and services. The implied mechanical rate is computed by deducting the average publisher performance royalty as a proportion of publisher revenue estimated from HFA data.

---

[38] **CO EX. R-5**, Lisa Yang, Heath Terry, Masaru Sugiyama, et al., Goldman Sachs Equity Research report (Oct. 4, 2016) ("GS Report") at 54 & 58.

[39] In referencing this source, I note it relevant that Goldman Sachs was engaged by Spotify in 2015 in connection with financing, and that Goldman Sachs in fact placed Spotify's recent $1 billion round of financing in 2016, facts which indicate that Goldman Sachs has had significant access to industry data and financials, and provide me additional comfort in relying upon these calculations. **CO EX. R-**6, Leslie Picker & Ben Sisario. *Spotify Expected to Sign $1 Billion Financing Deal*, The New York Times (Mar. 29, 2016), https://www.nytimes.com/2016/03/30/business/dealbook/spotify-expected-to-sign-1-billion-financing-deal.html?_r=0; **CO EX. R-**7, Hugh McIntyre, *Spotify Has Hired Goldman Sachs To Raise $500 Million In Funding*, Forbes (Feb. 1, 2015), http://www.forbes.com/sites/hughmcintyre/2015/02/01/spotify-has-hired-goldman-sachs-to-raise-500-million-in-funding/#6f3fd09e5bd4.

Figure 2: Depiction of my Original Shapley Analysis

31. In conjunction with the symmetry axiom described above, I relied on two additional elements. The first of which is the idea that the sound recording royalties negotiated in the free market are a fair allocation of profit between sound recording rightsholders and streaming services. That is, for benchmarking purposes, I assume the market outcomes observed are consistent with the theoretical outcomes of a Shapley game. The fairness of these deals is not diminished by the market power of one side or the other—Shapley values are meant to incorporate market power asymmetries, and the allocations that result from those asymmetries are one of the central ingredients in the fair result according to Shapley.[40]

[40] As is shown in Section VI.B, increasing the number of substitutable music distribution channels in the market increases the Shapley values of rightsholders. This is analogous to increasing the

Continued on next page

32. The second assumption I relied on has to do with the general distribution of profit when royalty rates for musical works rightsholders are increased. In principle, those funds could come from a decrease in service profit, a decrease in sound recording royalties, or an increase in consumer pricing.[41] As a simplification in my initial analysis, I conjecture that sound recording royalties remain constant, thus the increase in musical works royalties would either come from a reduction of service profits, or an increase in consumer pricing.[42] The general redistribution of profit in response to increased musical works royalties is fundamentally an empirical question—data limitations prevent me from precisely estimating such effects. Here, however, Dr. Marx's model is useful in modeling these potential changes. I have used Dr. Marx's model to examine changes when sound recording rates are *not* held constant. I find that even in the situation where sound recording royalties change in response to a change in musical works royalties, the Shapley model predicts musical works royalties that well exceed the rate proposed by the Copyright Owners.

33. Ultimately, my original analysis relies on fewer assumptions, instead using information that is baked into the sound recording market benchmark rates. Most importantly, as shown below, Dr. Marx's results line up very closely to my model (and support the reasonableness of the Copyright Owners' rate proposal) when her inappropriate assumptions are corrected.

VI. USING CONSISTENT INPUT ASSUMPTIONS BRINGS DR. MARX'S ANALYSIS IN LINE WITH MY CONCLUSIONS AND THE OBSERVED MARKET OUTCOMES

34. In this section, I describe my analysis of Dr. Marx's assumptions with which I take issue and that have material influence on her results (listed in Section V.A.). I have performed tests with regard to the effect of those assumptions on Dr. Marx's findings. Below, I discuss the

---

Continued from previous page

competition on one side of the market, which results in relatively greater market power for those on the other side of the market. Ignoring or diminishing these asymmetries makes for an *unfair* result compared to the Shapley analysis.

[41] In theory, a decrease in the non-content costs of services could also increase profits.

[42] Or, in theory, a reduction of service's non-content costs.

combined effect of making adjustments to Dr. Marx's model in order to correct each of these assumptions; the results of these corrections are presented in Figure 3.

Figure 3: Effects of Corrections to Dr. Marx's Model

Sources: Marx Report, ¶¶ 171-186, RIAA 2016 H1 Shipments Memo, and HFA00000001.
Notes: Values are averaged over all the substitution effects.

35. The dark blue middle line represents the royalty rate implied by Dr. Marx's model after the various corrections are made. I use a statistical model based on historical variation of interactive services' non-content costs relative to the growth of those services in order to estimate the effect of increasing volume on non-content costs. I report a statistical confidence interval to quantify uncertainty in my predictions of these costs. The range of royalties that could result from uncertainty in the costs estimates is reported in the form of a 95% confidence interval. The upper and lower bounds are depicted as red and blue lines respectively. The horizontal line shows the royalty rate implied by my original model.

A. DR. MARX USES HISTORICAL ACCOUNTING PROFITS INSTEAD OF EXPECTED SURPLUS FOR THE TIME PERIOD AT ISSUE IN HER ESTIMATION OF INTERACTIVE SERVICES COSTS

36. The subject of this rate proceeding is the statutory mechanical royalty rate for the period 2018 to 2022. However, Dr. Marx uses data from 2015 to estimate her model. Implicitly assuming that revenues and costs for the period 2018 to 2022 will match 2015 levels is flawed because interactive streaming revenues and costs have changed since 2015 and are expected to change dramatically in the immediate future. Revenue in 2016 is roughly twice that in 2015,[43] and projected to grow even more during the statutory period.[44] Calculating Dr. Marx's model with data for the first half of 2016 and making no other adjustments increases her estimated royalty payments by [redacted]

37. If market negotiations were to take place in order to determine a royalty rate for a future time period, current and past measures of costs and revenue would be of little consequence. This is particularly true in a new market experiencing the enormous growth and disruption that the interactive streaming market has experienced (and continues to experience). Consequently, Shapley values should be calculated based on expected revenues and costs over the time period in question.

38. In my original analysis, I was able to avoid much of this issue by basing my analyses on market observations. The market observations I used are negotiated rates in the free market. The negotiators of those rates are presumed to have fully considered their expectations of future costs and revenues when coming to an agreement. When deciding the royalty rate to charge to streaming services, record companies will likely recognize that services are currently competing for market share in order to achieve high future profits. Therefore, a service's willingness to pay is related to how much profit it expects in the future; and

---

[43] **CO EX. R-8**, Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics", Recording Industry Association of America, September 20, 2016, at 3, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf (accessed February 2, 2017).

[44] **CO EX. R-5**, GS Report at 43.

negotiated rates should incorporate expectations of future value. This idea is similar to the idea that current stock prices will incorporate expectations of future corporate performance.

39. The use of historical accounting data to model future surplus is inappropriate. It is necessary to adjust Dr. Marx's model to use estimates of future revenues and costs in order to make the Shapley analysis relevant to the estimation of mechanical royalties for the 2018-2022 rate period. Below, I describe the projections for future interactive streaming revenues and future non-content costs used to make these corrections. When I use these projections in Dr. Marx's model, with no other adjustments, the resulting royalties increase by [redacted].

40. The changes in the Shapley values that result from using projected revenues and costs are depicted in the pie chart on the right side of Figure 4. The pie chart on the left depicts the Shapley values reported from Dr. Marx's analysis. The Shapley values go up dramatically, as indicated by the increase in the relative areas of the pie charts. The change in shares of surplus reflects differences in the projected growth of each sector of the market over coming years and the fact that non-content costs are not expected to scale in proportion to revenues. However, in accordance with the symmetry axiom that holds the Shapley values for veto players equal, the increased values for the publishers and labels remain equal, a point that Dr. Marx herself admits.

Figure 4: Change in Shapley Values Resulting from Corrections to Dr. Marx's Shapley Analysis for Future Revenue and Costs

1. Interactive Streaming Revenues During the Rate-Setting Period are Forecast to be Much Higher than Current Streaming Revenues

41. The growth of interactive streaming in recent years is expected to affect revenues, costs, and profit margins during the rate-setting period. Royalties are set on a forward looking basis, making it essential to account for such changes. [45]

[45] **CO EX. R-9**, (SPOTCRB0006837). See "

42. Third-party industry analysts project continued revenue growth through 2030. Applying the projected global growth rate to US interactive streaming revenue produces annual average US revenue of $6.35 billion,[46] which I use in the correction of Dr. Marx's model.

43. To project future interactive streaming revenue, I start with 2016 1H revenue estimates from the RIAA.[47] Then, I apply the year-over-year revenue growth rate projected in the GS Report. Having annual revenue estimates for US non-interactive streaming, I simply use the average measure for the statutory period of 2018 to 2022.

2. Interactive Streaming Costs Will not Rise in Proportion to Revenues

44. Economists distinguish between two types of costs: variable costs and fixed costs. Variable costs increase proportional to the scale of production, while fixed costs tend to stay relatively constant irrespective of scale. We do not expect many fixed corporate costs (such as human resources, rent, legal, etc.) to increase commensurate with an increase in consumer usage. This is the heart of the principle of economies of scale: there are expected cost benefits in growth. I also note that, as Dr. Marx repeatedly states in her report, there are effectively no marginal costs from delivering additional music streams.[48] Thus, while there may be some variable costs for interactive streamers, one should not expect those costs to be very high. Growth should result in substantial reduction in costs as a percentage of revenue. For that reason, it is entirely inappropriate to estimate costs as increasing proportional to revenue. If we are to assume any increase in costs at all from an increase in streaming usage and revenue, it is necessary to do a statistical analysis on the relationship between costs and revenue, and then use that analysis to predict costs for a given level of revenue. I performed

---

[46] *See* Appendix A.

[47] **CO EX. R-8**, Joshua P. Friedlander, *News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics*, Recording Industry Association of America (Sept. 20, 2016), http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf (accessed February 2, 2017).

[48] As Dr. Marx testifies: "There are small incremental costs of providing streaming services, but most costs involved in the delivery of streams to consumers are fixed. A marginal cost of zero is a close approximation of true costs of delivery." Marx Report, at 45, n.131. As an expert witness for one of the largest streaming services, I consider Dr. Marx's conclusion on this question reliable.

such an analysis using Spotify's internal global financial data, which enables me to project expected non-content costs as a function of revenue.[49] Figure 5 shows my predicted global costs in relation to actual global costs and revenue. It is clear that [redacted].

Figure 5: Spotify Revenues and Non-Content Costs (in $Millions)

45. Using the relationship between non-content cost and revenues [redacted], I estimate the expected annual non-content costs associated with the expected level of US streaming revenue overall, previously estimated from RIAA and Goldman Sachs data as described in the previous section. [redacted]. These US non-content cost estimates as a

[49] A table showing the calculations underlying this analysis are in Appendix A.

percent of revenue are reported in Figure 6 along with the associated the estimated US streaming revenue.

Figure 6: Projected Global Streaming Revenue Growth

Sources: **CO EX. R-5** at 43; **CO EX. R-9**, [redacted] (SPOTCRB0006837); and **CO EX. R-180** [redacted] (SPOTCRB0005863).

46. [redacted]

[50] *See* **CO EX. R-9** (SPOTCRB0006837).

47. Based on the historical relationship between revenue and non-content costs evident in Spotify's global financial data, I project that .

48. My estimates are confirmed by Spotify's own internal financial forecasts. While Dr. Marx estimates non-content costs at of revenues based on her reading of 2015 financials, Spotify's own forecasts are that [51]

49. I have also reviewed internal cost projections relating to

---

[51] **CO EX. R-9**, (SPOTCRB0006837). See .

[52] Moreover, these cost projections so I consider them to be informed, good faith projections of Amazon's actual expected costs.

[53] **CO EX. R-24**, (AMZN00053095), at 8.

[redacted]

3. Future Costs and Revenue of Alternative Music Distribution Channels

50. Industry analysts expect global revenue generated by distribution channels other than streaming to decrease over the statutory period.[54] To estimate future US revenue from these alternative distribution channels, I apply the percent reduction in the analyst projections of global revenue to Dr. Marx's estimate of 2015 US revenue from 'other' music distribution channel.[55] The projected rate of [redacted] between 2015 and 2018, and [redacted] between 2015 and 2022. I calculate the revenue implied by these rates and use the average revenue between 2018 and 2022.

51. I assume that non-content costs decline at the same rate as revenue. In reality, these distribution channels may have some economies of scale, which would mean that their non-content costs decline at a slower rate than their revenue. However, I have found that this assumption has no material effect on the results of my analysis.[56]

4. Publisher and Label Projected Future Non-Content Costs

52. Industry experts expect publisher profit margins (as a percent of revenue) [redacted][57] This implies total costs as a percent of revenue will also remain constant.[58] Total costs are comprised of content costs and non-content costs, where the content costs cover

---

54 [redacted] **CO EX. R-5**, GS Report at 53. *See also*, Sheikh, et al, "Global Music." Credit Suisse Equity Research, Media / Entertainment, April 4, 2016, at 5.

55 Marx Report , November 1, 2016, at B-3-B-4.

56 To test this, I examined the alternate assumptions that costs would stay fixed at the 2015 levels estimated by Dr. Marx. This affected my results by less than 1%.

57 **CO EX. R-5**, GS Report at 58.

58 $Cost/Revenue = 1 - Profit/Revenue$. Since the term on the right is to remain constant, the term on the left must also remain constant.

those payments distributed by publishers to songwriters, and non-content costs cover other business operations. Songwriters tend to earn a percentage of the revenue generated by their work, so it is also reasonable to assume publisher content costs as a percent of revenue will remain fixed.

53. Given analysts' forecasts that total costs remain a fixed percentage of revenue, if content costs remain a fixed percentage of revenue, non-content costs will also remain fixed as a percentage of revenue.[59] I also assume non-content costs remain a constant percent of industry revenue, which is the revenue measure used in Dr. Marx's model.

54. In contrast to publishers, record companies are expected to have increasing profit margins.[60] This implies total costs, as a percent of revenue, will decline. Again, total costs are comprised of content and non-content costs. Assuming content costs as a percent of revenue remains fixed, the cost reduction will come from reduced non-content costs. I also assume that declining non-content costs can be expressed as a percent of industry revenue, which is the revenue measure used in Dr. Marx's model.

B. DR. MARX INAPPROPRIATELY USES SINGLE "REPRESENTATIVE" ENTITIES IN HER SHAPLEY CALCULATIONS INSTEAD OF MULTIPLE SERVICE PROVIDERS

55. Using representative downstream firms in a Shapley value model introduces downward bias in the estimate of publisher royalties. This point is made by Pandora's expert in this proceeding.[61] By assuming one representative streaming service, Dr. Marx's analysis models a market in which there is no competition between services, allowing services to exercise fictional market power in their negotiations with rightsholders. This is not a valid

---

[59] $(Total\ Cost)/Revenue = (Content\ Cost)/Revenue + (Non-Content\ Cost)/Revenue$. If the left term is constant and the middle term is constant, the right term must also be constant.

[60] One reason why analysists expect recording profit margins to increase has to do with the reduction in the distribution costs associated with physical media, as the market shifts from physical to downloads and streaming. **CO EX. R-5**, GS Report at 54.

[61] "When applying the Shapley Value, it can be tempting to assume that many parties have merged in order to reduce the number of parties considered. […] Unfortunately, attempts to simplify the [Shapley value] calculation by assuming that there are fewer [parties] can have the effect of increasing those parties' market power as reflected in the Shapley Value." Katz Report at 19.

representation of the market. Services are substitutes for one another, providing rightsholders with a wide array of choices in their licensing decisions. In reality, this competition reduces individual services' bargaining power. Artificially combining services in a Shapley model increases their combined Shapley value. In other words, the Shapley value of the combined entities is greater than the sum of their individual Shapely values, which would result from independent market negotiation. Thus, artificially combining interactive streaming services, as Dr. Marx does, diminishes the relative value allocated to rightsholders.

56. Artificially combining all alternative channels of music distribution, which are also substitutes, has a similar distortional effect. Dr. Marx presents this as a necessary simplifying assumption, even though it is feasible to include multiple services and multiple alternative channels in the model, as I illustrate in this section.

57. An intuitive way of thinking about this issue is in terms of competition. If there were only a single large service to which rightsholders could license their music, then the price paid by that service would be fairly low because there is no competition to drive prices up. If, on the other hand, there were several substitutable smaller services, those services would be expected to attempt to outbid one another, thereby driving up the price.

58. Given the fact that more than one streaming service actually exists in the market, it is inappropriate to treat them as if they were a single entity. There is also substantial competition, which Dr. Marx ignores, within and across the many alternative distribution channels that make up Dr. Marx's "other" entity. My analysis of Dr. Marx's model reveals these assumptions have a material effect on the results of her model, skewing her reported results in favor of services.

59. By simply increasing the number of interactive services and alternate "other" channels to three each, I show in Figure 3 that the royalty rates estimated by her model increase

substantially by [redacted].[62] Figure 7 shows that when more interactive streaming services are added to the model, the total share of surplus going to all services decreases due to the substitutability of those services. Note that the total downstream revenue being generated by the three services depicted in the right side of the figure is equal to the revenue being generated by the singe service depicted on the left side of the figure. Hence, when more streaming services are added to the model, total revenue and the total profit to be shared remain the same; however, a larger portion of that profit is allocated to rightsholders.[63]

---

[62] In this version of the model, I assume that streaming services are 100% fully substitutable for one another. I examined this assumption by testing the model with less substitutability and found that allowing only 75% substitutability between services only changes my results by about 3% (royalty rate as a percent. In other words, the percentage of service revenue paid out in royalties changes by 0.8 percentage points.).

[63] The number of permutations of possible coalitions between the participants in the Shapley game is a factorial of the number of participants. Thus, computing a Shapley with 8 players requires 40,320 coalitions to be analyzed and incremental surplus contributions computed for each participant. I appreciate the complexity of a large Shapley analysis might lead Dr. Marx to seek to simplify her model, but this is not an excuse to adopt simplifications that dramatically bias the results in the services' favor. Using a computer program rather than a spreadsheet-based analysis allowed me to compute the large number of surplus calculations needed. Code was written to compute the surplus contributions for any combination. The results produced are intuitive from a conceptual understanding of the theory behind the Shapley valuation.

Figure 7: Corrections to Dr. Marx's Shapley Analysis (to include Multiple Interactive Services)

60. Similarly,

61. Figure 8 shows that including more 'other' distribution channels decreases the share of profit going to "others" and increases the share going to rightsholders. However, that is not the only effect. When the number of "others" increases, the share of surplus going to interactive services also shrinks, with the difference being shifted to rightsholders. This is because other distribution channels also compete with interactive streaming services, which causes services to have to pay a higher royalty to rightsholders.

Figure 8: Corrections to Dr. Marx's Shapley Analysis (to include Multiple Other Services)

62. From this analysis, it is plain to see Dr. Marx's "simplifying" assumptions are not innocuous. On the contrary, they have a material effect, artificially skewing the implied royalty rate in favor of services. Partially accounting for the bargaining effects that Dr. Marx's model ignores results in increased fair royalty rates.[64] Notably, in reality more than three streaming services and three alternative distribution channels exist in the market. Modeling all of them, though computationally challenging, would yield even higher shares of surplus for rightsholders.

[64] Note that this is a pure bargaining effect. It does not take into account the possibility that interactive services will pass some of that value back to consumers as they compete for those consumers.

C. STRUCTURAL DIFFERENCES DO NOT SIGNIFICANTLY CHANGE PREDICTED FAIR OUTCOMES

63. There are other differences between my approach and that of Dr. Marx. First, her model includes distribution channels other than interactive streaming. Second, Dr. Marx does not treat any fraction of the royalties paid by publishers and record labels to songwriters and artists as economic costs of music distribution.

64. Alternative distribution channels should not be included as parties in a conventional Shapley analysis because they are not participants in the interactive streaming business. They are a constant presence in the market irrespective of interactive services' negotiations with rightsholders. The effect of interactive streaming on the surplus earned in other distribution channels is an opportunity cost of interactive streaming services. This opportunity cost is baked into the observed sound recording interactive streaming royalty rates I use as a benchmark in my original analysis. Re-estimating Dr. Marx's model using this specification is not straightforward, however, because this would involve additional model inputs: the opportunity cost and the fraction of publisher and labels non-content costs that correspond to alternative distributions channels. I have made plausible estimates of these inputs and found that making these structural changes to Dr. Marx's model does not have a material effect on the results.[65]

65. In her analysis, Dr. Marx does not deduct the royalty amounts paid by publishers and record labels to songwriters and artists from the total pool of profit to be split up between publisher, labels, and services.[66] By taking this position, Dr. Marx assumes that songwriters and artists incur no costs and that all of the revenue they receive is pure profit. This is an unreasonable assumption; songwriters and artists buy musical instruments, travel for collaborations, and even rent office or studio space. Moreover, basic economic principles tell us the labor of songwriters and artists should be counted as production cost. In my original analysis, I

---

[65] I assume the fraction of publisher and label non-content costs associated with alternative distribution channels is equal to the corresponding fraction of downstream revenue. I re-estimate Dr. Marx's model excluding the opportunity cost to provide a lower bound estimate of rightsholder royalty rates. Including this opportunity cost in the model would raise the royalty estimates for the rightsholders.

[66] Dr. Marx only counts non-content costs as legitimate costs incurred by publishers and record labels.

recognize the fraction of royalties paid to songwriters and artists as production costs. While I disagree with Dr. Marx's failure to recognize the legitimate production costs incurred by songwriters and artists, my analysis suggests a correction for this factor would not significantly change the estimates of the appropriate share of surplus due to musical works rightsholders. Even without a correction for this factor (which would only serve to increase payments due to rightsholders under a Shapley model), the resulting estimates of surplus allocation show the Copyright Owners' proposed royalty rate is below the Shapley-based estimates.

D. CORRECTING THE INPUTS TO DR. MARX'S ANALYSIS LEADS TO A RANGE OF ESTIMATES FROM HER MODEL THAT OVERLAPS WITH MY ORIGINAL ESTIMATES

66. Figure 9 below illustrates how Shapley values and non-content costs combine to produce different estimates of royalty revenues for musical works, sound recording royalties, and services that change with the successive cumulative corrections (described above) to Dr. Marx's model. Each solid bar represents the per-stream Shapley value of publishers, record labels, or interactive streaming services (the same values depicted in the pie charts above). The correspondingly colored line above the blue and red bars represents total per-stream revenue necessary to earn profit equal to a player's Shapley value. These are the royalty rates for labels and publishers. The gap between the line and the solid bar represents costs per-stream.

Figure 9: Shapley Values and Costs for Marx and Corrected Versions

Sources: Marx Report, ¶¶ 171-186, and RIAA 2016 H1 Shipments Memo.
Notes: Data is from the predicted cost version of the Shapley Model. Values are averaged over all the substitution effects.

67. The Shapley values for the two rightsholders are equal in every scenario, including in Dr. Marx's model. Dr. Marx's model is shown in the first cluster of bars. This is her model that allows publishers and labels to negotiate as separate market participants. The second cluster of bars shows the effects of using appropriate estimated revenue and cost levels, as corroborated by (1) my analysis based on a regression of Spotify's actual financials; (2) Spotify's internal forecasts; and (3) Amazon's internal forecasts. Shapley values for services and rightsholders go up as a consequence of this correction. The ratio of musical works revenue and sound recording revenue shrinks. The third cluster of bars shows the effects of adding additional independent services (with the same aggregate costs and revenue). The effect is to decrease the Shapley values of services and equitably increase each of the two

rightsholders' Shapley values. Increasing the number of alternative distribution channels has a similar effect, which is seen in the fourth cluster.

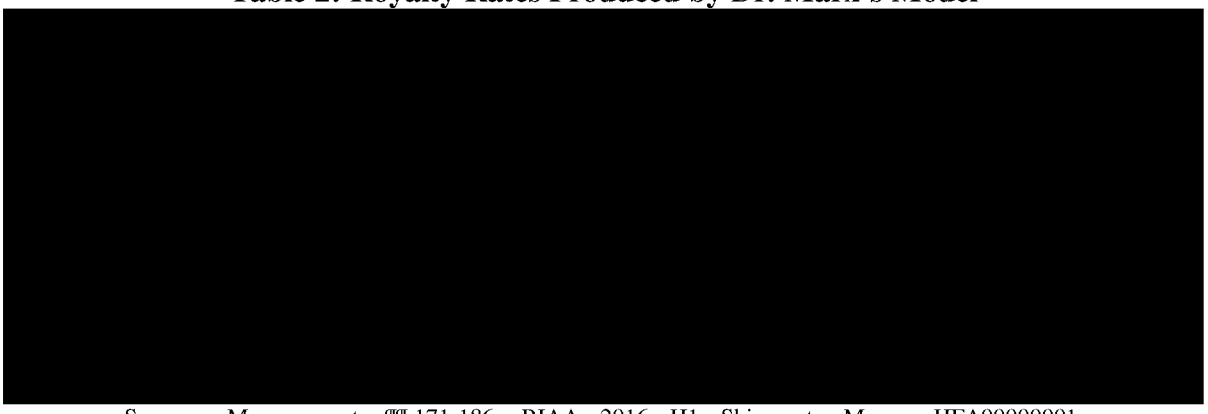
68. A significant observation concerning the Shapley analysis evident from Figure 9 is that as the Shapley value increases the ratio of publisher to label royalty rates declines, narrowing the gap in royalties. This is evident in comparing the results of Dr. Marx's model to the results using future revenues and costs. The differential in revenues is a consequence of a difference in relative costs. Since the Shapley values for publisher and labels are equal, as the Shapley values increase, the gap in royalty rates closes.

1. The Various Shapley Models Produce Similar Estimates of the Ratio of Label to Publisher Royalties

69. Table 2 lists the sound recording and musical works royalties that are implied by Dr. Marx's model. I also deduct performance royalties from the musical works all-in rate to find the corresponding mechanical royalty rate as a percent of service revenue. Additionally, for each scenario, I calculate the implied ratio of sound recording to musical works royalties.

70. One way to compare the results of my original Shapley analysis with Dr. Marx's results is in terms of the relative all-in royalty revenues paid to labels and publishers predicted when musical works are not subject to compulsory licensing at the statutory rate. Dr. Marx's Shapley analysis produces revenue ratios for publishers vs. labels that are close to the ratio I estimated of [redacted] (see Table 2). Making the necessary corrections to Dr. Marx's model closes the revenue gap between the publishers and labels further, giving a ratio of as low as [redacted], lower than my original estimate. The corrected results are lower than my original estimates because in addition to musical works royalties going up, sound recording royalties are going down. Note, however, sound recording royalties are going down because I have assumed services cannot raise consumer prices. If, in fact services can raise consumer prices, as I believe the case to be, then sound recording rates would not necessarily decrease as much as they do when consumer prices are assumed to be fixed.

Table 2: Royalty Rates Produced by Dr. Marx's Model



Sources: Marx report, ¶¶ 171-186, RIAA 2016 H1 Shipments Memo, HFA00000001; KOBALT00000096 – KOBALT00001308.

71. The royalty rates in Table 2 are not based on a benchmarking procedure (the bottom-up approach builds up estimates *de novo* from estimates of revenues and costs) and so are not derived from actual market rates. However, the ratio of publisher to label royalties derived from Dr. Marx's Shapley analysis can be applied to a benchmark sound recording rate to produce market-based benchmark estimates. I conduct this exercise in the next section.

2. Per-Play Royalty Rates Can be Estimated Using the Revenue Ratios from Dr. Marx's Model and Sound Recording Rate Market Benchmarks

72. I apply the ratios of label to publisher revenue estimated using my corrected version of Dr. Marx's analysis to the sound recording benchmark royalty rate calculated by Dr. Eisenach and used in my Shapley analysis.[67] The results are reported in Table 3. The process here is

[67] As a robustness check, I have reviewed several recent licensing agreements between

Continued on next page

simple. It is the same procedure I used in by original analysis. Having established the above ratios in the different scenarios, I use a benchmark market per-play rate for sound recording royalties of [redacted] per 100 plays to calculate the respective musical works royalty rate. Perhaps most importantly for this proceeding is that even Dr. Marx's model (before any corrections) produces a royalty rate for musical works that exceeds the rate proposed by the Copyright Owners. The corrected models show an even higher estimated rate for musical works rightsholders.

Table 3: Mechanical Royalties Estimated Using Ratio of Record Company to Publisher Revenue Implied by Shapley Values

[redacted]

Sources: Marx report ¶¶ 171-186, Gans Report, Eisenach Report, RIAA 2016 H1 Shipments Memo, HFA00000001, and KOBALT00000096 – KOBALT00001308.

Continued from previous page

[redacted]

Notes:
[1] Derived in Table 2.
[2] Sound Recording benchmark rate estimated in Dr. Eisenach's direct report.
[3] Derived from royalty information for 23 streaming services with non-zero royalty payments in 2015. Excludes free/ad-supported (S5) and limited streaming services (S6).
[5] Sound Recording benchmark rate estimated in Dr. Eisenach's direct report.
[6] Derived from royalty information for 23 streaming services with non-zero royalty payments in 2015. Excludes free/ad-supported (S5) and limited streaming services (S6).

73. In each of the corrections to Dr. Marx's analysis, I have implicitly held consumer pricing fixed (the price charged by services to consumers for subscriptions or to advertisers for ad space). However, it would also be reasonable to assume services would raise prices in response to higher publisher royalties.[68] Nonetheless, data limitations prevent me from analyzing the sensitivity of my estimates to changes in consumer pricing. If consumer prices were raised, royalties would also likely increase. This is one example of additional adjustments that are warranted, and would indicate an increase in rightsholder royalties, but for which I do not have sufficient data.

74. Another important adjustment that cannot be made but that would undoubtedly increase the estimation of fair royalties involves the definition of service revenues. For the purposes of this analysis, I have worked off of the services' own accountings and forecasts for revenues from music streaming. My understanding is that these measures of revenue only take into account narrow categories of revenue, primarily subscription payments received from users or advertising dollars paid for the placement of advertisements alongside streaming delivery. I have reviewed rate proposals by the services, and note that their proposed definitions of "service revenues" are narrowly tailored to capture only certain revenues driven by the exploitation of musical works. However, the Shapley analysis is meant to capture all surplus attributable to the use of the goods at issue, in this case musical works. Such surplus includes all value generated for the services, whether through subscription payments,

---

[68] One clear example of this option is that when Spotify found itself facing an unanticipated government tax in New Zealand earlier this year, it simply raised its prices from NZD$12.99 to NZD$14.99 per subscriber per month to cover the cost. Services can plainly raise prices to cover additional costs, as this example from just a few weeks ago demonstrates. **CO EX. R-16**, *'Netflix tax' pushes Spotify price up,* Otago Daily Times, https://www.odt.co.nz/entertainment/music/netflix-tax-pushes-spotify-price (accessed February 7, 2016); **CO EX. R-17**, *Go Premium. Be happy,* Spotify, https://www.spotify.com/nz/premium/ (accessed February 7, 2016).

associated sales of goods (such as phones, etc.) or services (such as Amazon Prime), ecosystem value or any other contributor of value. If such downstream value is not included in the surplus to be divided, then the upstream parties are not receiving a fair payment. Particularly with respect to companies such as Apple, Google, and Amazon, I would expect significant– if not dominant– company value from interactive streaming to be recognized in companion or complementary business value metrics, not in the accounting line item for music streaming subscriptions. Illustrative of this is the internal [redacted].[69] Without sufficient data to calculate the true total downstream surplus (a task that would be overwhelming if not impossible for the total industry at even one point in time, let alone over a range of time), the Shapley model will underestimate surplus due to rightsholders.

VII. DR. MARX'S MODEL CAN BE APPLIED TO ANALYZE THE IMPACT OF COMPULSORY LICENSING ON CONTENT ROYALTIES

75. While Dr. Marx did not do so, her model can be validated against market outcomes by adapting it to estimate royalties paid to labels when publishers are subject to the prevailing compulsory licensing regime. This is a critically important exercise to assess the reliability of any conclusions drawn from the model. It provides an opportunity to test whether Dr. Marx's model can explain actual economic activity in the market rather than simply offer an untethered theoretical view.

76. Measuring Dr. Marx's model, with and without the necessary corrections, against market evidence, I find the corrected version of her model to be more consistent with reality. Then

---

[69] In [redacted]

using this corrected version of her model that best represents the current market structure and is consistent with market evidence, I examine the effects of applying that model to a market in which publishers as well as labels can freely negotiate royalty rates.

77. Dr. Marx's Shapley model is designed to represent a hypothetical market in which musical works rightsholders can freely negotiate outside of the influence of the prevailing regime of compulsory licensing at the statutory rate. I will refer to this modeling of a hypothetical market as the "un-restricted model." The adaptation needed to model the prevailing market regime is to fix publisher royalties at the statutory rate and remove them so they are no longer participants in the Shapley bargaining game. That is, I compel them to participate in every coalition; they cannot be a holdout nor can they exercise any bargaining power. I refer to this model of the prevailing market as the "restricted model."

78. With the restrictions applied to the model, I have re-estimated Dr. Marx's model as well as all of my corrections to her model. The effect of the restrictions is for the surplus of the publishers to be fixed by the statutory royalty rates. The surplus that they might have earned above the statutory rate, if not compelled by that rate, is available to the other players. Once publishers' rates can be negotiated in the un-restricted model, the publishers' surplus rises and increases the royalty rate. The effect on surplus of allowing publishers to freely negotiate mechanical royalty rates is depicted in the comparison of the two pie charts in Figure 10. The compulsory royalty rate for publishers in the restricted model upsets the equality of the surplus earned by publishers and labels in the un-restricted model.

Figure 10: Surplus Split, Restricted vs. Un-Restricted Models

80. Table 4 shows the royalty rates associated with this restricted model (in Panel [A])compared to the un-restricted model (in Panel [B]). Because the restricted model is structured to be consistent with actual market and statutory conditions, we should expect the sound recording royalty to resemble actual royalties negotiated in the free market. Nonetheless, the restricted model using Dr. Marx's original assumptions and inputs produces a royalty rate for labels that is lower than market observations. However, after making the corrections to Dr. Marx's model that I have proposed, the results are remarkably close to those observed in the market.

Table 4: Restricted Model vs. Un-Restricted Model

Sources: Marx Report ¶¶ 171-186, Eisenach Report, RIAA 2016 H1 Shipments Memo, HFA00000001, and KOBALT00000096 – KOBALT00001308.

Notes:

Mechanical royalties are calculated by subtracting estimated performance royalties from all-in royalties.

Performance royalties are estimated from HFA00000001 and KOBALT00000096 – KOBALT00001308.

[A] Restricted model assumes that musical works rightsholders are compelled to be in every coalition and holds their royalty rate fixed.

[B] Un-restricted model represents a market where musical works rightsholders are free to negotiate rates

[1] Uses a version of Dr. Marx's model where musical works royalties are fixed at the statutory rate.

[2] Based on Dr. Marx's model with corrected estimates of revenues and costs, modeled with three interactive streaming players, and three alternative distribution players.

[3] Rates converted to a per play rate based on Dr. Eisenach's estimated current sound recording per play rate of [redacted] per 100 plays.

81. The difference in royalties estimated with Dr. Marx's corrected model when it is restricted to match the statutory licensing regime, compared to the un-restricted version, in which publishers can negotiate freely, illustrates the impact of the compulsory licensing regime. The fact that Dr. Marx's original model in (column [1] of Table 4) produces similar results in the restricted or un-restricted versions is another indication that it fails to accurately reflect the economics of the interactive streaming market. This is a consequence of her choice of inappropriate assumptions in estimating her model; the same assumptions that result in under-estimation of current observed market rates for royalties paid by labels (in the first row

of column [1]). The inability of Dr. Marx's model to produce estimates close to the observed market rate for label royalties invalidates the assumptions and results of her uncorrected model.

82. The corrected version of Dr. Marx's model (Column [2], Panel [A] of Table 4), when restricted to reflect compulsory musical works licensing, is more reflective of observed sound recording rates (which have been freely negotiated). In Panel [B], I show the effect of un-restricting the model by letting musical works rightsholders negotiate in the market. As expected, the results show the effect of compulsory statutory licensing is to depress publisher royalties. In the un-restricted model, musical works rightsholders become veto players and so can bargain for the same profit contribution as the labels. Comparison of the restricted and un-restricted models provides evidence that the publisher rates have been historically understated.

83. Dr. Marx's model as corrected in column [2] is a reasonable proxy for rates in prevailing market conditions, yielding close to [redacted] percent of interactive service revenues to the labels. Dr. Eisenach's estimate for the market royalty per 100 plays is [redacted][70] Thus, assuming the same relative revenues as estimated using Dr. Marx's corrected model, Dr. Eisenach's benchmark rate can be used to estimate a penny rate for publishers. Given the benchmark rate and the percent of revenue paid to sound recording rightsholders in Panel [A] of column [2], I calculate the total service revenue on a per-play basis. I then apply the subsequent percent of revenue measures in column [2] to the total service revenue per-play. The result of the un-restricted model implies an unconstrained market would produce an effective mechanical royalty rate of [redacted] per 100 plays.

84. Comparing the results in columns [1] and [2] of Table 4 shows that, were publishers able freely to negotiate their rates as labels do, musical works royalties would rise and sound recording royalties would likely fall as a percent of revenue.

---

[70] Eisenach Report, Table 11, at 87.

VIII. CONCLUSION

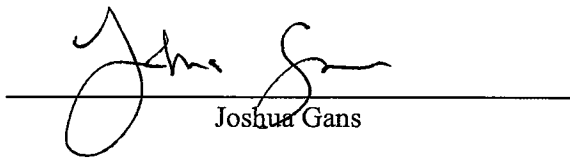
85. Dr. Marx and I have developed Shapley analyses that are useful in determining a fair level of mechanical royalties in for the distribution of musical works via interaction streaming. However, Dr. Marx's model must be corrected to account for significantly inappropriate assumptions and oversimplifications. I have explained how to understand our different implementations of the Shapley approach and to reconcile the two approaches by making three key corrections and by validating the models against observed market outcomes.

86. I argue the conforming corrections I have made to Dr. Marx's analysis are necessary because: the relevant costs and revenues of streaming services will be materially different over the statutory period compared to what Spotify accounted for as costs in 2015; there is more than one interactive streaming service in the market; and there is more than one alternative music distribution channel in the market. Moreover, after the corrections are made, Dr. Marx's model results are consistent with the market evidence.

87. The results of Dr. Marx's Shapley analysis, after key corrections are made can assist in explaining the effects of the compulsory rate on the content royalty rates, ultimately corroborate my conclusion that the Copyright Owners' proposed rate is reasonable.

I declare under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information and belief.

Dated: February 13, 2017



Joshua Gans

APPENDIX A: COST AND REVENUE PROJECTIONS

1. The expected future costs and revenues of interactive streaming, other distribution channels, publishers, and labels are used to correct Dr. Marx's Shapley value calculations. I describe below the details of my projections of:

   1) Future streaming service revenue and non-content costs,

   2) Revenue and non-content costs from alternate ('other') music distribution channels,

   3) Non-content costs from sound recording rightsholders, and

   4) Non-content costs from musical works rightsholders.

I. FUTURE STREAMING REVENUE AND NON-CONTENT COSTS

A. PROJECTED INTERACTIVE STREAMING REVENUE

2. To estimate future US interactive streaming revenue, I use projections of future global streaming revenue growth rates for 2017 to 2022 made by industry analysts.[1,2] I then take 2016 1H US interactive streaming revenue[3] (annualized[4]) and apply the year-over-year projected growth rates from 2017 to 2022. I compute the average expected US interactive streaming revenue for the years 2018 to 2022 of $6.31 billion. Table A1 lists the annual growth rate projections in column [2] along with the US interactive streaming revenue implied by those growth rates in column [1].

---

1 **CO EX. R-5**, Yang, Lisa, Heath P. Terry, Masaru Sugiyama, et al. Goldman Sachs Equity Research report (October 4, 2016) ("GS Report") at 43.

2 Projections do not distinguish between interactive and non-interactive streaming services; however, given interactive streaming's relative novelty, it is reasonable to expect its growth rate to exceed that of non-interactive streaming; thus the average growth rate of the two service types is likely an underestimate for the growth rate of interactive streaming alone.

3 **CO EX. R-8**, Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics", Recording Industry Association of America, September 20, 2016, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf, at 3 (accessed February 2, 2017).

4 To annualize first half data, I simply multiply it by two. In reality, given the growth rate of streaming, we would expect second half revenues to exceed first half revenues. Therefore, simply doubling 1H revenue likely underestimates annual revenue and thereby underestimates fair royalty rates.

Table A1: Projected US Interactive Streaming Estimated Revenue (in $Billions)

Year	On Demand Streaming Revenue [1]	Growth Rate [2]
Observed		
2015	$1.60	-
2016	$2.42	51%
Projected		
2017	$3.38	40%
2018	$4.40	30%
2019	$5.41	23%
2020	$6.33	17%
2021	$7.28	15%
2022	$8.15	12%

[1]: 2015 value based on 2015 RIAA end of year shipping report. See **CO EX. R-8**, Joshua P. Friedlander, "News and Notes on 2015 RIAA Shipment and Revenue Statistics", Recording Industry Association of America, March 22, 2016, http://www.riaa.com/wp-content/uploads/2016/03/RIAA-2015-Year-End-shipments-memo.pdf, at 3 (accessed February 2, 2017). 2016 value based on 2016 RIAA midyear shipmate report, extrapolated to full year. *See* **CO EX. R-8**, Joshua P. Friedlander, "News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics", Recording Industry Association of America, September 20, 2016, http://www.riaa.com/wp-content/uploads/2016/09/RIAA_Midyear_2016Final.pdf, at 3 (accessed February 2, 2017). The 2016 growth rate is the observed growth rate. Remaining values are projections.

[2]: **CO EX. R-5**, GS Report at p. 43.

B. PROJECTED INTERACTIVE STREAMING COSTS

3. I conduct a statistical analysis on Spotify's internal global financial data to project the future non-content costs of interactive streaming services. I use global data rather than US data because global data is available for a longer time series. Data comes from Spotify's internal financial documents. It includes [redacted]. Projections are made with a set of candidate linear regression models (listed in Table A2) estimated with ordinary least squares (OLS). Candidate models vary in terms of certain data transformations and the inclusions of time trends.[5] Table A3 shows the model comparison statistics of the candidate models.

[5] I selected these models based on my understanding of the data and the relationship between revenue and non-content costs. The inclusion of transformed data allows me to test the nature of the relationship between revenue and non-content costs. For example, including revenue and the square root of revenue in the same model allows for the fact that different components of non-content costs may grow at different rates relative to revenue. Using the log of data (Ln) allows me to estimate the local elasticity of non-content costs in relation to revenue. Note, however, that elasticities tend to be only locally consistent, which can make their use as a forecasting tool tenuous in some settings.

Continued on next page

4. I use a standard statistical tool, the AIC,[6] for comparing different statistical models. The AIC allows me to identify the model that is most efficient in predicting outcomes for data outside of the data set.[7] This is different from so called "goodness of fit" measures such as the R^2 insofar as it balances the model's goodness of fit with model parsimony.[8] This is important because un-parsimonious models can over-fit the data. That is, they can produce estimates that are highly tailored to the specific data used to estimate the model, but are invalid for data points outside of the range of data used for estimation. I am estimating these models using historical data in order to predict future costs based on future revenue. Future revenue is likely to be substantially different from historical revenue. Hence, it is necessary to choose a statistical model that can do a good job fitting historical data, but is also valid in predicting outcomes based on future revenue. The AIC is an appropriate tool for choosing such a model.[9] Of the candidate models, the most likely model according to the AIC is model 4.

Continued from previous page

Including a time trend tests for the presence of systematic trends in costs driven by some factor unrelated to revenue. Model simplicity was also a factor in my selection of candidate models. Given the relatively small data set used, simple models are desirable—model complexity coupled with small data sets can lead to unstable and unreliable results in some cases.

6 The AIC (Akaike information criterion) is adjusted for small sample size. Additionally, the AIC of models with transformed dependent variables is modified (the likelihood is multiplied by the Jacobian of the transformation), so that models with transformed dependent variables can be directly compared to models with untransformed dependent variables. *See generally*, Akaike, Hirotugu. "A new look at the statistical model identification." IEEE transactions on automatic control 19, no. 6 (1974): 716-723.

7 AIC defines model efficiency as minimizing the information lost by choosing a model that is different from the process by which data is actually generated. For example, there may be a deterministic process by which changes in revenue mechanically affect non-content costs. The precise characteristics of that mechanical process are unknown, which is why a statistical model is necessary. When choosing a statistical model, it is likely not possible to choose one that exactly encompasses all of the characteristics of the mechanical relationship between revenue and costs. Therefore, a simplified model is chosen to approximate that relationship; this results in the loss of information. It is desirable to choose a model which minimizes the loss of information. Of a given set of models, the model with the lowest AIC is the model which minimizes the loss of information.

8 The AIC has two competing components. The first is a measure of the goodness-of-fit, which rewards a model for having a high likelihood of predicting the observed data. The second is a penalty for adding additional parameters into the model. Therefore, in order for the AIC to justify the inclusion of a parameter, that parameter must add a sufficient amount of predictive power to the model. Superfluous parameters that may invalidate out-of-sample predictions tend to be excluded.

9 An alternative method to choosing the most predictive model is out-of-sample testing. This involves using a subset of the data to estimate a model and then testing the predictions of that model against the data not used for estimation. However, this is not a feasible approach with small data sets such as Spotify's financial data.

Table A2: Candidate Models for Spotify Cost Projections

Model Number	Model Description
1	$Cost = \beta_0 + \beta_1 Revenue + t_1 TimePeriod + \varepsilon$
2	$Cost = \beta_0 + \beta_1 Revenue + \beta_2 Sqrt(Revenue) + t_1 TimePeriod + \varepsilon$
3	$Cost = \beta_0 + \beta_1 Revenue + \varepsilon$
4	$Cost = \beta_0 + \beta_1 Revenue + \beta_2 Sqrt(Revenue) + \varepsilon$
5	$Cost = \beta_1 Revenue + t_1 TimePeriod + \varepsilon$
6	$Cost = \beta_1 Revenue + \beta_2 Sqrt(Revenue) + t_1 TimePeriod + \varepsilon$
7	$Ln(Cost) = \beta_0 + \beta 1 Ln(Revenue) + t_1 TimePeriod + \varepsilon$
8	$Ln(Cost) = \beta_0 + \beta 1 Ln(Revenue) + t_1 TimePeriod + \varepsilon$
9	$Ln(Cost) = \beta_1 Ln(Revenue) + t_1 TimePeriod + \varepsilon$

Table A3: Model Comparison Statistics

Model Number	MSE	RSS	F	Significance F	AIC	Probability of Model
	[1]	[2]	[3]	[4]	[5]	[6]
Dependent Variable = Cost						
1	9.58E+07	9.58E+08	147.8	3.75e-08	283	0.071
2	6.76E+07	6.09E+08	141.3	6.91e-08	283	0.083
3	1.74E+08	1.91E+09	157.7	7.28e-08	288	0.007
4	6.40E+07	6.40E+08	223.7	4.99e-09	278	1.000
5	2.47E+08	2.71E+09	447.6	2.90e-11	293	0.001
6	9.02E+07	9.02E+08	822.7	2.89e-12	283	0.105
Dependent Variable = Ln(Cost)						
7	1.23E-02	0.122	90.71	3.89E-07	290	0.003
8	1.37E-02	0.152	158.8	7.02e-08	288	0.007
9	1.39E-02	0.152	63656.2	4.47e-23	288	0.007

[5] The AIC provides a measure of relative model quality. Models which reduce information loss have a lower AIC, hence models with low AIC are preferred to models with high AIC. Note that the models in the top panel cannot be directly compared to those in the bottom panel using an untransformed AIC because the models in the lower panel use a transformed dependent variable. AIC has been adjusted for models with transformed dependent variables by multiplying the likelihood by the Jacobian of the transformation.

[6] Directly compares models across top and bottom panels to produce the probability of a model being the most efficient model, relative to the model with the lowest AIC.

5. I estimate the parameters of model 4 using ordinary least squares regression analysis. Using the equation and the estimated parameters: β_0, β_1, and β_2, along with the

projected streaming revenue presented in Table A1, I calculate projected future non-content costs for streaming services. Those projected values are presented in Table A4. I also include the upper and lower bounds of a 95% confidence interval around my non-content cost estimates. I use the average of these annual non-content costs from 2018 to 2022 in my correction of Dr. Marx's model.

[redacted]

Source: [redacted] (SPOTCRB0006837).

6. The results of my analysis reveal non-content costs of Spotify decrease as a percent of revenue, both with scale and maturity. Many of Spotify's costs are fixed, i.e., they do not increase with scale. Hence, as Spotify grows, its revenue will increase, while fixed costs remain constant, causing them to represent a smaller portion of revenue. This concept is known as economies of scale. Economies of scale are most pronounced in firms that do not produce a physical product or rely heavily on human capital (labor), e.g., technology firms. Similarly, as Spotify matures, its costs associated with establishing a market presence (e.g., customer acquisition and R&D costs) will likely fall, since such costs are most prevalent in less mature firms. Note that if initial establishment costs are large, then as a firm matures and those costs subside, total costs may even decline in absolute terms, irrespective of increased revenue and scale. Ultimately, the fact that my statistical model predicts lower costs as a percent of revenue is unsurprising.

7. I examined internal financial projections from Amazon to compare their non-content costs to Spotify's.[10] That data shows Amazon's non-content costs are [redacted]. Moreover, Amazon projects future non-content costs [redacted].

II. FUTURE REVENUES AND NON-CONTENT COSTS OF 'OTHER' MUSIC DISTRIBUTION CHANNELS.

A. PROJECTED 'OTHER' REVENUE

8. As consumers switch to interactive streaming services, the revenue generated by 'other' distribution channels is projected to decrease. The anticipated decline of 'other' revenue is evident in projections made by industry analysts, such as those in Figure A1. From these projections, I calculate the expected year-over-year rate of change in revenue generated by 'other' distribution channels. I then apply that annual rate of change to the US 2015 'other' revenue calculated by Dr. Marx in her report.[11] The results of this analysis produce projections of future 'other' revenue, which are listed in Table A5. I have tested other measures of future 'other' revenue[12] and found the results of the Shapley value analysis to be insensitive to this input, in terms of the predicted royalty rates paid by interactive streaming services.

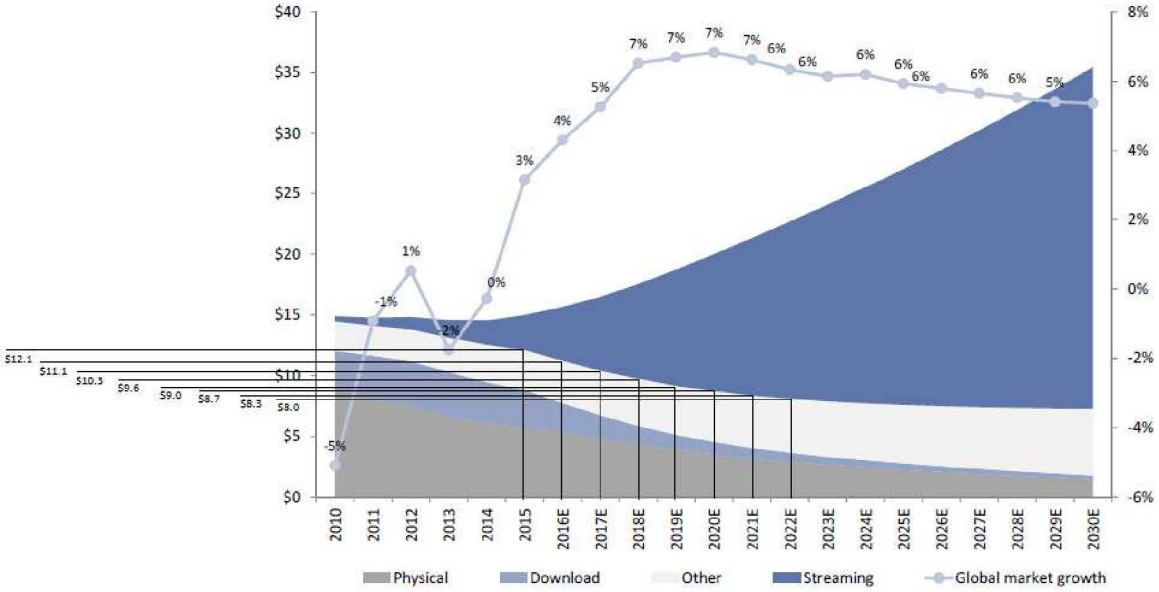
---

10 **CO EX. R-24**, [redacted] (AMZN00053095), at 8.

11 Marx Report, November 1, 2016, at B-3–B-4.

12 I tested the Shapley model with the assumption that 'Other' revenues and costs do not decline, but instead stay at 2015 levels over the statutory period.

Figure A1: Global Recorded Music Market Revenues



Source: **CO EX. R-5**, GS report at p. 53.

Table A5: Future US 'Other' Distribution Channels Revenue and Cost (in $Billions)

Year		'Other' Global Revenue	Year over Year % Change	'Other' US Revenue	'Other' US Profit	'Other' US NC Cost
		[1]	[2]	[3]	[4]	[5]
Initial Value						
2015	[A]	$12.06	N/A	$8.51	$3.76	$4.76
Projections						
2016	[B]	$11.08	-8%	$7.82	$3.45	$4.37
2017	[C]	$10.29	-7%	$7.27	$3.21	$4.06
2018	[D]	$9.61	-7%	$6.78	$2.99	$3.79
2019	[E]	$9.02	-6%	$6.37	$2.81	$3.56
2020	[F]	$8.73	-3%	$6.16	$2.72	$3.44
2021	[G]	$8.33	-4%	$5.88	$2.60	$3.29
2022	[H]	$8.04	-4%	$5.68	$2.50	$3.17
Average (2018-2022)	[I]	$8.75	-5%	$6.17	$2.72	$3.45

This table calculates the year-over-year % change in global non streaming revenue, then applies that % change to US revenue, given actual 2015 US revenue and cost.

[1] **CO EX. R-5**, GS Report at p. 53.

[2] Year-over-year rate of change implied by [1].

[3][A] Marx Report ¶ 179.

[3][B] - [3][H] Projected based on year-over-year global rate of change.

[4][B] - [4][H] Projected based on year-over-year global rate of change.

[5][B] - [5][H]	Projected based on year-over-year global rate of change.
[I]	= ([D] + [E] + [F] + [G] + [H])/5

B. PROJECTED 'OTHER' COSTS

9. I have tested the two extreme opposite alternative assumptions: that all costs are fixed; and that costs are variable. While these opposite assumptions do change the projected future costs of 'others', I find those alternative cost projections to have a negligible effect on the royalty rates predicted by a Shapley analysis. For the purposes of my corrections to Dr. Marx's model, I assume the future non-content costs of 'others' decrease proportional to revenue.

10. The resulting non-content cost projections based on my variable cost assumption are reported in column [5] of Table A5Table A5. To reach these projections, I apply the year-over-year projected rate of change in revenue (column [2]) to 2015 cost levels. Note that in my alternate assumption of fixed non-content costs, all future costs remain constant at 2015 levels.

III. PROJECTED NON-CONTENT COSTS FOR MUSICAL WORKS RIGHTSHOLDERS

11. For musical works rightsholders, analysts predict profit margins will remain constant over time. This implies total costs as a percent of publisher revenue will remain constant over time. Total costs are comprised of non-content costs and content costs. Because the content costs going from publishers to songwriters are often structured as a percent of revenue, I assume they remain a constant percent of revenue over time. Therefore, it is the case that non-content costs would also remain a constant percent of revenue over time. That is, in order for profit to remain a constant percent of revenue, total costs must remain a constant percent of revenue. In order for total costs to remain a constant percent of revenue, non-content costs must also remain a constant percent of revenue. I further assume non-content costs can be expressed not only as a percent of

publisher revenue, but also as a percent of industry wide revenue.[13] Table A6 shows my calculations for 2016 non-content costs. The same approach is applied to subsequent years, the results of which are reported in Table A7.

Table A6: Projected Musical Works Non-Content Costs (in $Billions)

[A] Observed		2015
NC Costs	[1]	$0.42
Streaming Revenue	[2]	$1.60
'Other' Revenue	[3]	$8.51
Total Revenue	[4] = [2] + [3]	$10.12
NC Costs as % of Ind Rev	[5] = [1]/[4]	4%
[B] Projected		**2016**
Streaming Revenue	[6]	$2.42
'Other' Revenue	[7]	$7.82
Total Revenue	[8] = [6] + [7]	$10.24
NC Costs as % of Ind Rev	[9] = [5]	4%
Projected MW NC costs	[10] = [8] x [9]	$0.43

Sources:
[1] Marx Report ¶ 173
[2] Marx Report ¶ 179
[3] Marx Report ¶ 186
[6] Reported in Table A1.
[7] Reported in Table A5.

Table A7: Projected Musical Works Non-Content Costs (in $Billions)

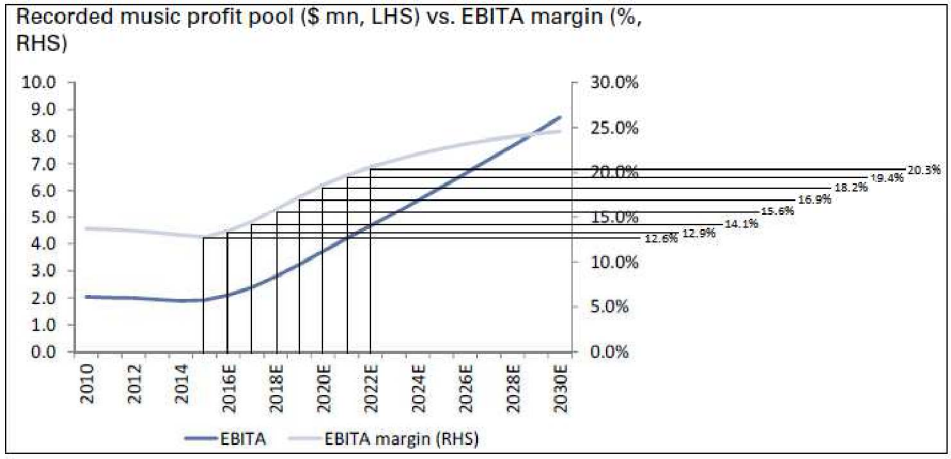
Year	Projected Musical Works Non-Content Costs
2015	$0.42
2016	$0.43
2017	$0.45
2018	$0.47
2019	$0.49
2020	$0.52
2021	$0.55
2022	$0.58
Average (2018 -2022)	$0.52

[13] The underlying logic to this assumption is that non-content costs are driven by the volume of music distribution, and the volume of music distribution is represented by industry-wide revenue.

IV. PROJECTED NON-CONTENT COSTS FOR SOUND RECORDING RIGHTSHOLDERS

12. Analysts predict an increase in profit margins for sound recording rightsholders, and thus a decrease in cost margins.[14] Projected future profit margins are depicted in Figure A2. Sound recording costs are comprised of content costs (artist and repertoire costs) and non-content costs. I assume content costs are a fixed percentage of revenue, since artist contracts are often based on the revenue generate by their work. Therefore, the increased profit margin is the result of decreased non-content costs. I also assume recording non-content costs can be expressed as a percent of industry-wide revenue.[15] My calculations of projected non-content costs in 2016 are listed in Table A8. The same calculations are applied to subsequent years, the results of which are reported in Table A9.

Figure A2: Recorded Music Profit and Growth



Source: **CO EX. R-5**, GS Report, p. 54.

---

[14] The increase in recording industry profits is driven by a shift from physical music distribution, which is costly, to digital music distribution, which has relatively low marginal costs.

[15] The underlying logic to this assumption is that non-content costs are driven by the volume of music distribution, and the volume of music distribution is represented by industry-wide revenue.

Table A8: Projected Sound Recording Non-Content Costs (in $Billions)

[A] Observed		2015
Profit and Cost Margins		
Profit Margin	[1]	13%
Total Cost Margin	[2] = 1 - [1]	87%
NC Cost Margin	[3]	45%
Content Cost Margin	[4] = [2] - [3]	42%
Sound Recording Cost and Revenue		
Non-Content Cost	[5]	$2.61
Recording Revenue	[6] = [5]/[3]	$5.76
Industry Revenue		
Interactive Streaming Revenue	[7]	$1.60
'Other' Revenue	[8]	$8.51
Total Revenue	[9] = [7] + [8]	$10.12
SR Costs and Revenue as % of Industry Revenue		
Recording Revenue as % of Ind Revenue	[10] = [6]/[9]	57%
NC Costs as % of Ind Rev	[11] = [3] x [10]	26%
[B] Projected		**2016**
Profit and Cost Margins		
Profit Margin	[12]	13%
Total Cost Margin	[13] = 1 - [12]	87%
Content Cost Margin	[14] = [4]	42%
NC Cost Margin	[15] = [13] - [14]	45%
SR Costs and Revenue as % of Industry Revenue		
Recording Revenue as % of Ind Revenue	[16] = [10]	57%
NC Costs as % of Ind Rev	[17] = [15] x [16]	26%
Industry Revenue		
Interactive Streaming Revenue	[18]	$2.42
Other' Revenue	[19]	$7.82
Total Revenue	[20] = [18] + [19]	$10.24
Projected SR NC costs	[21] = [20] x [17]	$2.62

Sources:

[1] Figure A2
[3] Marx Report ¶ 174
[5] Marx Report ¶ 176
[7] Marx Report ¶ 179
[8] Marx Report ¶ 186
[12] Figure A2
[18] Reported in Table A1.
[19] Reported in Table A5.

Table A9: Projected Sound Recording Non-Content Costs (in $Billions)

Year	Projected Sound Recording Non-Content Costs
2015	$2.61
2016	$2.62
2017	$2.65
2018	$2.69
2019	$2.75
2020	$2.82
2021	$2.88
2022	$2.96
Average (2018 -2022)	$2.82

APPENDIX B: MATERIALS RELIED UPON

Legal Documents & Statutes

17 U.S.C. 801(b)(1) (2010)(B)

Copyright Royalty Board, "Distribution of 1998 and 1999 Cable Royalty Funds," Docket No. 2008-1 CRB CD 98-99 (Phase II), 2015.

Proceeding Materials

Written Direct Statement of Joshua Gans, Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-003-PR (2018-2022), October 31, 2016.

Written Direct Statement of Leslie M. Marx, Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-003-PR (2018-2022), November 1, 2016.

Written Direct Statement of Jeffrey A. Eisenach, Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-003-PR (2018-2022), October 31, 2016.

Written Direct Statement of Michael L. Katz, Determination of Royalty Rates and Terms of Making and Distributing Phonorecords (Phonorecords III), Docket No. 16-CRB-003-PR (2018-2022), November 1, 2016.

[redacted] (AMZN00053095-AMZN00053106)

[redacted] (SPOTCRB0006837)

Academic Literature

Richard Watt, "Fair Copyright Remuneration: The Case of Music Radio," Review of Economic Research on Copyright Issues 7, no. 2 (2010): 21-37, accessed September 16, 2016, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1737449 (Watt 2010).

Akaike, Hirotugu. "A new look at the statistical model identification." IEEE transactions on automatic control 19, no. 6 (1974)

Websites

Picker, Leslie and Ben Sisario. "Spotify Expected to Sign $1 Billion Financing Deal." The New York Times. March 29, 2016.

https://www.nytimes.com/2016/03/30/business/dealbook/spotify-expected-to-sign-1-billion-financing-deal.html?_r=0 (accessed February 7, 2016).

McIntyre, Hugh. "Spotify Has Hired Goldman Sachs To Raise $500 Million In Funding." Forbes. February 1, 2015. http://www.forbes.com/sites/hughmcintyre/2015/02/01/spotify-has-hired-goldman-sachs-to-raise-500-million-in-funding/#6f3fd09e5bd4 (accessed February 7, 2016).

"Amazon Music Unlimited FAQ." Amazon. https://www.amazon.com/b?node=15730321011 (accessed February 7, 2016).

"'Netflix tax' pushes Spotify price up." Otago Daily Times. https://www.odt.co.nz/entertainment/music/netflix-tax-pushes-spotify-price (accessed February 7, 2016).

"Go Premium. Be happy." Spotify. https://www.spotify.com/nz/premium/ (accessed February 7, 2016).

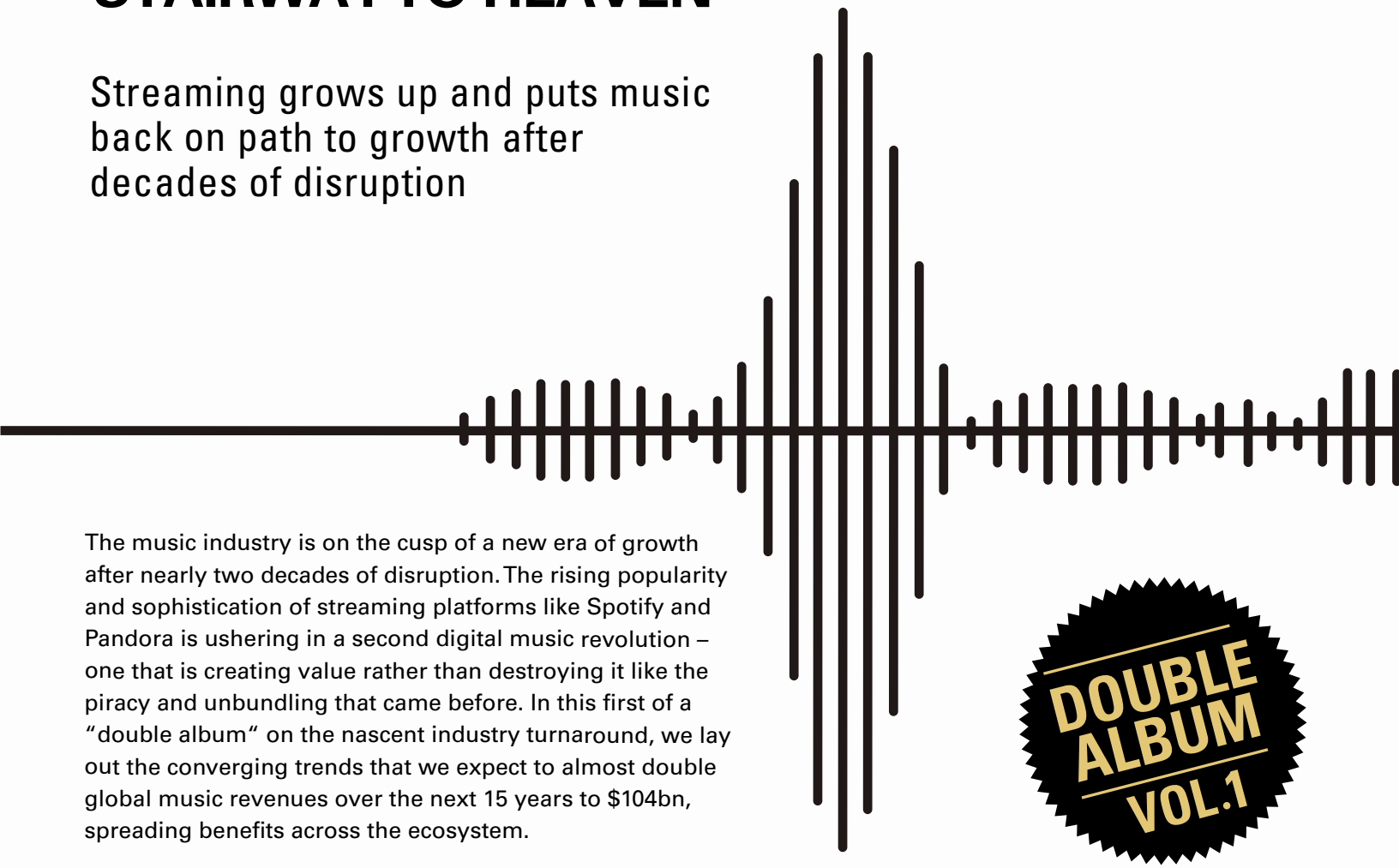
http://cast2016.coep.org.in/content/dr-vineet-chaoji

Goldman Sachs

MUSIC IN THE AIR

STAIRWAY TO HEAVEN

Streaming grows up and puts music back on path to growth after decades of disruption



The music industry is on the cusp of a new era of growth after nearly two decades of disruption. The rising popularity and sophistication of streaming platforms like Spotify and Pandora is ushering in a second digital music revolution – one that is creating value rather than destroying it like the piracy and unbundling that came before. In this first of a "double album" on the nascent industry turnaround, we lay out the converging trends that we expect to almost double global music revenues over the next 15 years to $104bn, spreading benefits across the ecosystem.

Lisa Yang
+44(20)7552-3713
lisa.yang@gs.com
Goldman Sachs International

Heath P. Terry, CFA
(212) 357-1849
heath.terry@gs.com
Goldman, Sachs & Co.

Masaru Sugiyama
+81(3)6437-4691
masaru.sugiyama@gs.com
Goldman Sachs Japan Co., Ltd.

Simona Jankowski, CFA
(415) 249-7437
simona.jankowski@gs.com
Goldman, Sachs & Co.

Heather Bellini, CFA
(212) 357-7710
heather.bellini@gs.com
Goldman, Sachs & Co.

Table of contents

The prices in the body of this report are based on the market close of October 3, 2016.

Contributing authors: *Lisa Yang, Heath P. Terry CFA, Masaru Sugiyama, Simona Jankowski CFA, Heather Bellini CFA, Robert D. Boroujerdi, Hugo Scott-Gall, Piyush Mubayi, Brett Feldman, Drew Borst, Otilia Bologan, Mark Grant, Yusuke Noguchi, Matthew Cabral, Shateel T. Alam, Stephen Laszczyk, Aditya Buddhavarapu, Katherine Tait. We also would like to thank Annabel Hazlitt and Kieran Chalmers for their contribution to this report.*

MUSIC'S RETURN TO GROWTH in numbers

EASY LISTENING

630 million — Audio streams consumed per day by the US population during 1H2016—a 97% yoy jump. (p. 32)

400 — The number of streaming platforms available globally. The US alone boasts 57. (p. 32)

30 million vs. 21,000 — The number of tracks available on Spotify compared to the number of tracks available at a Walmart store. (p. 32)

MILLENNIAL APP-ETITE

4 — Of the 10 most-used apps by Millennials, the number that are music-related. (p. 47)

77% — Proportion of Spotify listeners that are Gen Z/ Millennials. (p. 47)

LISTENING LIVE

24 million / 40%

Average unsold concert tickets in the US per year because of lack of awareness of the events. Streaming sites like Pandora are attempting to use behavioral and geo-targeting to better match ticket supply and demand, which could help recover some of the estimated $2bn in lost revenue. (p. 14)

ROOM TO GROW IN PAY-TO-PLAY

2% — Paid streaming penetration globally as a % of smartphone subscribers. (p. 9)

<50% — Percentage of the DM population that pays to listen to music. According to YouTube, only 20% of people globally have ever paid for music. (p. 31)

+60 million — The growth in paid streaming subscribers globally between 2010 and 2015, bringing the total to 68mn people. Associated revenue grew from $0.3bn to $2.3bn. (p. 39)

THE PAYMENT GAP

0 — Royalty paid by traditional radio to labels and artists in the US. (p. 18)

40% / 4% — Share of music listening on YouTube compared to the share of global recorded music revenue generated by YouTube. (p. 25)

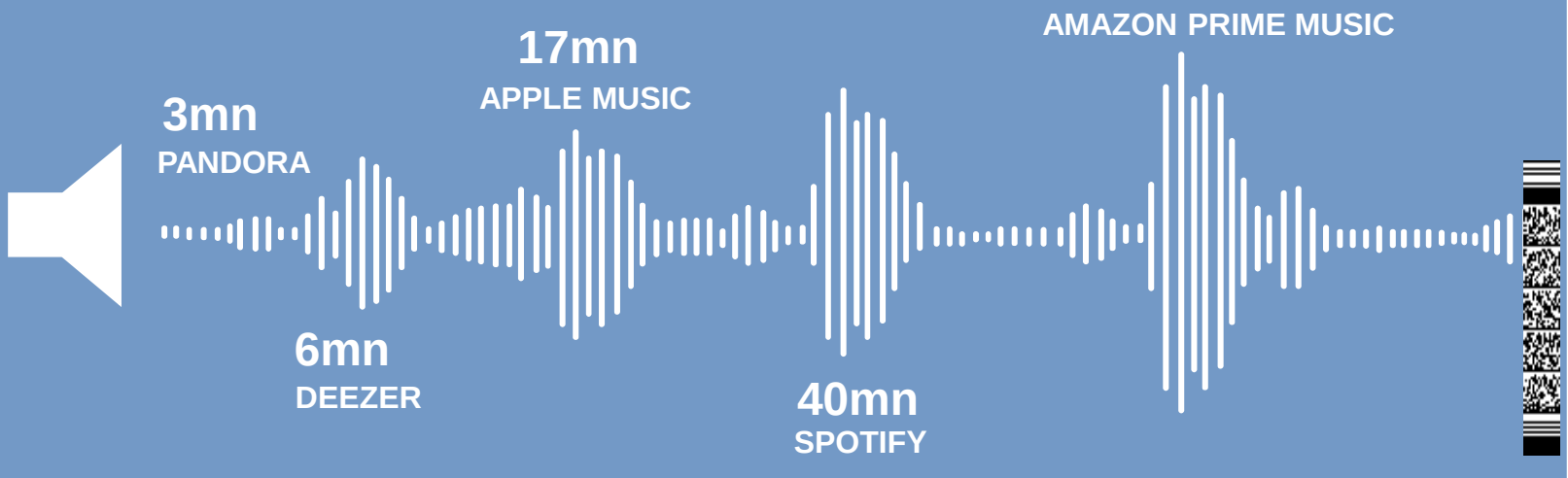
EMERGING MARKETS

90% — Piracy rates in China, India, Mexico, and Brazil, according to IIPA, implying a huge potential for better quality (paid/free) streaming services. (p. 43)

Additional revenue (equivalent to 10% of the global recorded music market) that can be generated with a 1% increase in paid penetration in EMs. (p. 45) — **$1.5 billion**

ALL ABOUT THAT BASE

Current paid subscriber base for popular streaming platforms (p. 33)



Stairway to Heaven: Streaming drives new era of growth

We believe new technology changes such as the emergence of internet radio and music streaming are driving a new era of growth for the recorded music industry. New tech enablers such as Spotify, Apple or Pandora have disentangled music content from its delivery. The resulting convenience, accessibility and personalization has driven more consumption of legal music and greater willingness to pay for it, at a time of improving connectivity and growing consumer preference for accessing rather than owning music. Unlike its predecessor, this "second" digital revolution creates more value for rights holders (rather than destroys it), shifting revenue streams from structurally declining markets (physical, download sales) to a significantly larger new revenue pool (ad-funded and subscription streaming). This shift has enabled the recorded music market to return to growth in 2015 following almost two decades of value destruction led by piracy and unbundling.

We believe the overall music industry, including recording, publishing and live, is now set to double to over $100 bn by 2030. In this first of a "double album", we explore the converging trends that make this digital revolution different to and more profitable than the last.

Streaming drives greater monetization of music content…

By revolutionizing the listening experience, making it seamless and personalized, streaming improves the monetization of music content through 1) a range of **subscription streaming options** with multiple price points that address consumers willing to pay for better access and convenience, and 2) **ad-funded, free streaming** that addresses consumers not able or willing to pay (therefore reducing piracy). Moreover, streaming **improves the discoverability of catalogues and increases their value.**

… while benefitting from a growing and captive audience

We see particularly attractive forces supporting streaming growth:

- **Room to grow penetration of subscription services in DMs**, currently at 3%. We see scope to catch up with the Nordics, already at over 20% as user mix continues to evolve favourably towards paid tiers. Globally, we forecast paid streaming to grow to 9% of the smartphone population in 2030 from 2% in 2015.
- **The nascent music markets in EMs**, which stand to benefit from improving recognition of IP, new business models (ad-funded, prepaid, telecom bundles, etc.) and innovative payment capabilities. EMs accounted for just 10% of the global recorded music market in 2015 and the Chinese music market was smaller than that of Sweden.
- **Media consumption habits of Generation Z and Millennials,** who are the ideal audience for streaming given their inherent characteristics of being "digital natives" focused on experience and convenience. Millennials already spend more on music than the average person in the US driven by paid streaming and live music.
- **Further benefit from telecom and tech companies' large marketing budgets and existing customer base** as these players increasingly leverage music content to drive greater differentiation of their services and upselling.

Further upside from regulatory changes

Convoluted rules and regulations dictate the flows of payments from platforms to rights holders, and understanding these intricacies and their evolution is essential. We believe the emergence of new digital distribution models is positive for rights holders given a more attractive royalty structure in the US and see further upside from potential regulatory changes which could reshape future flows of payments from platforms (especially YouTube and on-demand streaming services).

A rising tide lifts (almost) all boats; industry responses will be key

In addition to the structural and regulatory tailwinds highlighted above, we believe industry responses will be critical in shaping the future growth of the industry which has only started to recover. We would expect some level of coordination among labels and platforms to maximize that growth potential. As a result, we believe the split of revenue pools will remain broadly unchanged in the medium term.

- **Subscription streaming services are the enablers and the direct beneficiaries of the above-mentioned shifts.** We also believe they will increasingly leverage their promotion capabilities, user data and customer relationships to drive new revenue streams (e.g. ticketing) and improve their deals with the labels. However, the landscape is more competitive (Pandora and Amazon launch in 2H16) with risk of disruptive behaviour such as exclusivity and price competition. As a result, we believe their distributor's cut will remain at c.30%, leading to $13 bn/$2-2.5 bn of additional revenue/ profit by 2030. We expect the scene to be divided among pure play streaming services such as Spotify and large tech players such as Apple or Amazon.
  Main beneficiaries in our coverage: Apple (Buy), Pandora (CL-Buy).
- We expect **ad-funded services to eat into terrestrial radio** given the ongoing migration to online listening and better targeting capabilities, creating $5 bn of additional revenue by 2030. Future roll-out of connected cars and 5G will further accelerate that shift.
  Main beneficiary in our coverage: Pandora (CL-Buy); main loser: iHeart (Not Covered)
- We believe **the labels have the most to gain given their royalty cut of 55%-60%**. Their position should remain solid as distribution fragments (and they will have a vested interest in keeping a minimum of competitive tension among platforms) and digital increases the complexity of the industry. The outcome of their (re)negotiations with YouTube, Spotify or Amazon in the coming months and regulatory changes will be key in this regard. However, we see disruptive forces, such as alternative labels, driving a greater redistribution of profits to artists. Overall, we forecast that streaming will increase their revenue pool by $21 bn by 2030 and profit pool by $7 bn.
  Main beneficiaries in our coverage: Vivendi (CL-Buy), Sony (CL-Buy).
- **Publishers should see similar trends to labels but to a lesser extent** given their royalty cut of 10% (note that publishers and labels often belong to the same parent company), creating an additional revenue pool of $3 bn and profit pool of $1 bn.
- **Live music growth benefits ticketing and streaming players.** By using geo-specific targeting to known fans, players such as Ticketfly/Pandora and other streaming services should be able to drive down vacancy rates, increasing artist revenues, and improving relationships with artists.
  Main beneficiary in our coverage: Pandora (CL-Buy).

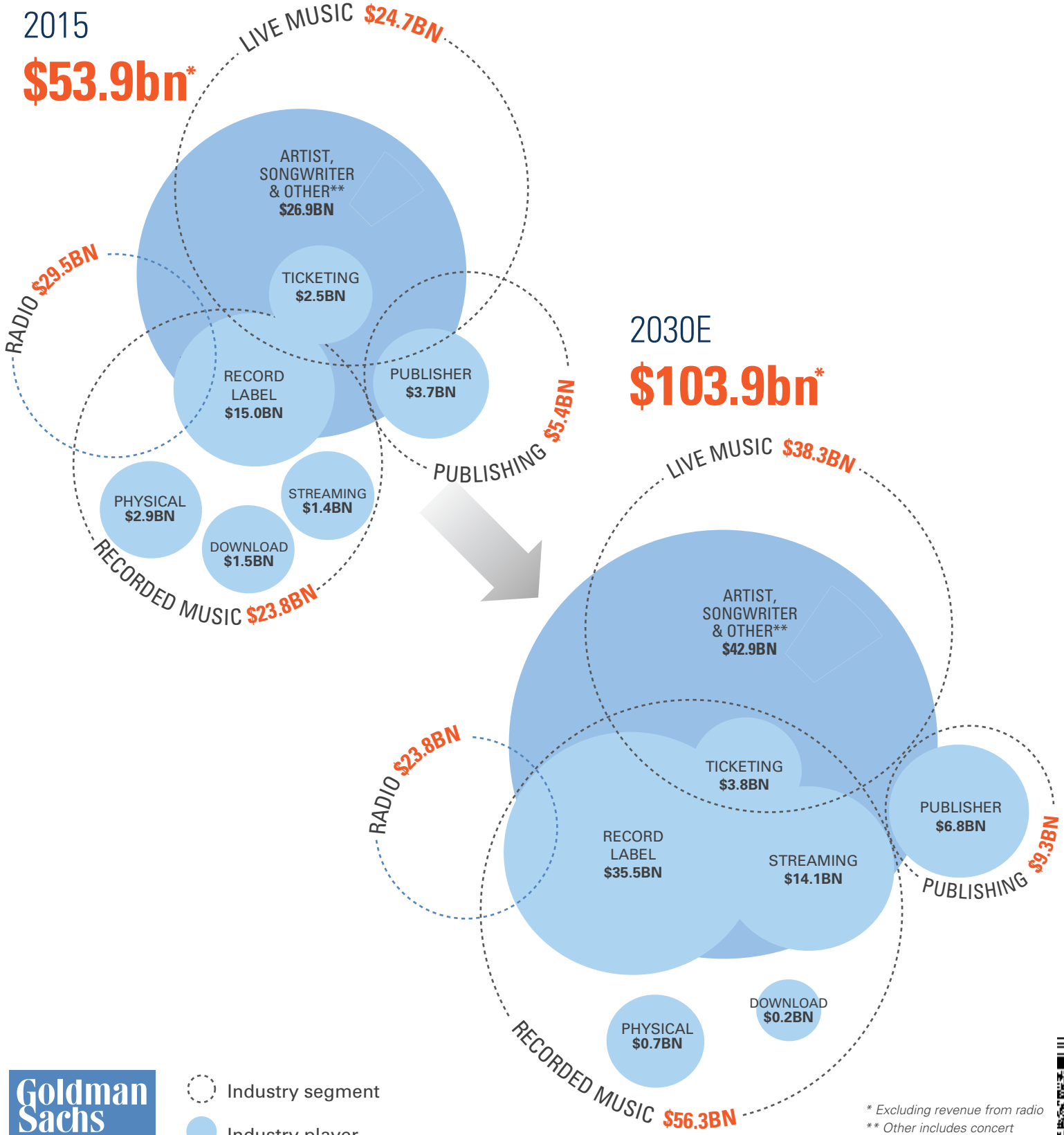
Industry risks: See the second of our double album "Paint It Black"

See the second of our double album: Music in the Air – Paint it Black

While a number of positive structural and regulatory shifts pave the way for better monetisation of music content, industry responses will also be critical in shaping the future growth of the industry. In this first of a "double album", we have assumed some level of coordination among labels and platforms to maximize that growth potential. In the second of our double album, "Paint It Black", we highlight potential disruptive behaviour that could derail the music recovery.

The Ecosystem

Evolution of revenues 2015-2030E



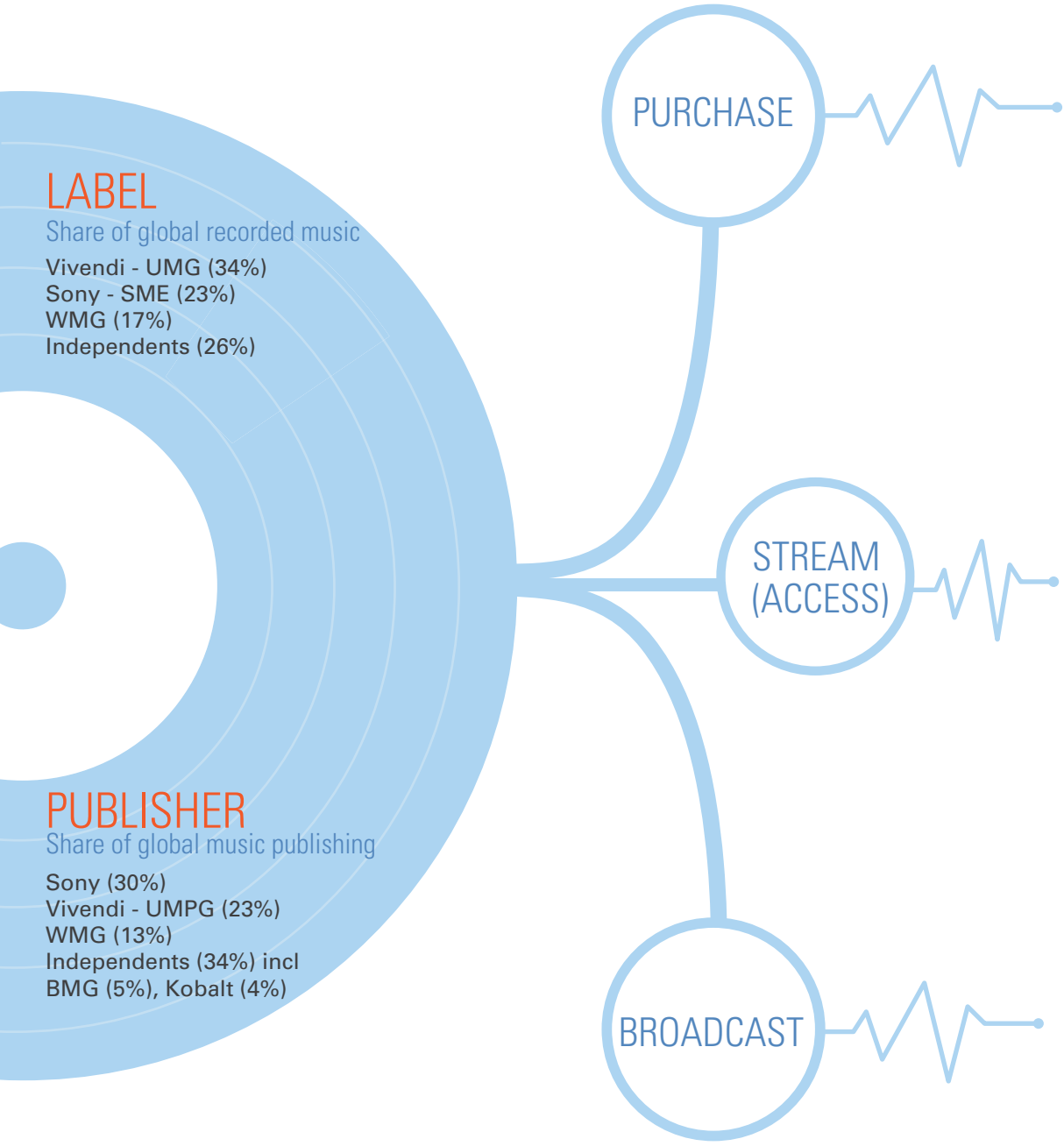
Goldman Sachs

* Excluding revenue from radio
** Other includes concert promoters, venue operators etc.

Source: IFPI, Goldman Sachs Global Investment Research

The Ecosystem

Key players and market shares (2015)



Physical/Online Retail
Share of US CD sales
Amazon (24%)
Walmart (22%)

Download
Share of US downloads
Apple - iTunes (52%)
Amazon (19%)
Alphabet - Google Play (11%)

Pure Player
Share of global paid subscribers
Napster/Rhapsody (4%)
Tidal (2%)
Spotify (44%)
Deezer (5%)
Pandora (N/A)

Tech Player
Share of global paid subscribers (unless otherwise indicated)
Apple - Apple Music (15%)
Alphabet - YouTube (90% share of ad-funded users)
Amazon (N/A)
Tencent - QQ Music (N/A)

AM/FM
Share of US radio
iHeartMedia (23%)
CBS Radio (8%)
Cumulus Media (8%)
Entercom Communications Corporation (3%)
Emmis Communications Corporation (c.2%)

Satellite Radio
Share of US satellite radio
Sirius XM (100%)

Online Radio
Share of US online radio
Pandora (31%)
iHeartRadio (9%)

Goldman Sachs

UMG - Universal Music Group
SME - Sony Media Entertainment
WMG - Warner Music Group
UMPG - Universal Music Publishing Group
BMG - Bertelsmann Music Group

Source: Company data, Music & Copyright, IFPI, Goldman Sachs Global Investment Research

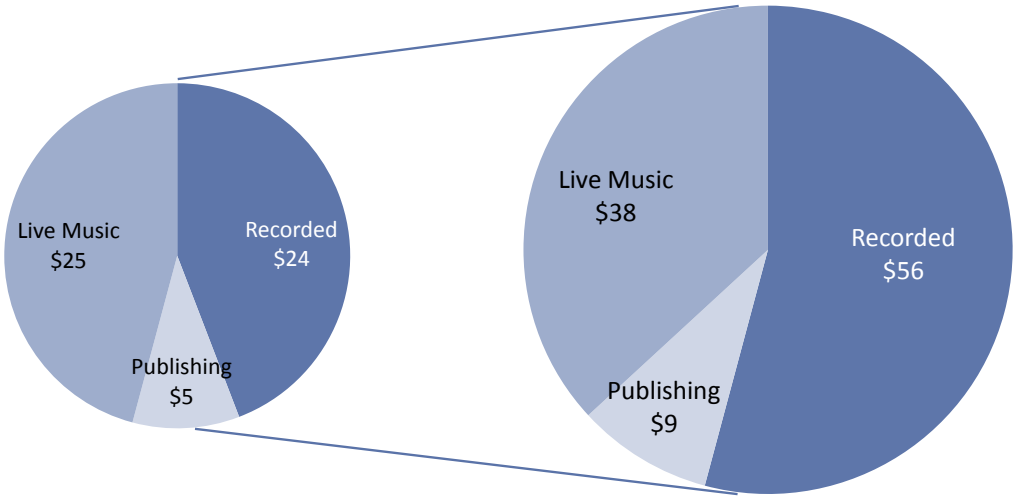
We use the following list of terms interchangeably throughout the report:

- Freemium = ad funded tier = free tier (applicable to streaming services such as Spotify or Deezer but not to Apple Music or Tidal)
- Interactive = on-demand (applicable to streaming services such as Spotify, Deezer, or Apple Music but not to Pandora's ad-supported internet radio service)
- Internet radio = non interactive streaming = webcasting (applicable to Pandora's internet radio service or iHeart but not to Sirius XM's satellite radio)
- Rights owners = labels, artists, publishers and songwriters altogether or any one of them
- Recorded music companies = record labels = labels

Stairway to $50 bn of additional revenue opportunity

We forecast overall music industry (recorded music, music publishing and live music) revenue to almost double in size over the next 15 years to $104 bn from $54 bn in 2015. Of that $50 bn revenue growth potential, we expect $32 bn to come from the recorded music segment, which has only started to recover after almost two decades of decline, while Publishing and Live should continue to show healthy growth and add $4 bn and $14 bn of revenue respectively.

Exhibit 1: $50 bn of additional revenue opportunity mainly driven by recorded
Music industry revenue split in bn, 2015 vs. 2030E

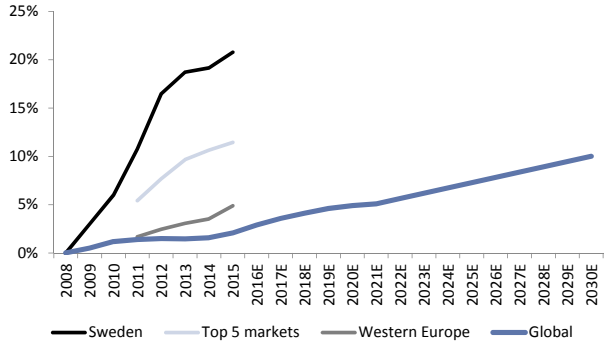


Source: IFPI, Goldman Sachs Global Investment Research.

We assess the size of the total addressable market by looking at the smartphone population, consumer spending on entertainment and the advertising market (in particular radio).

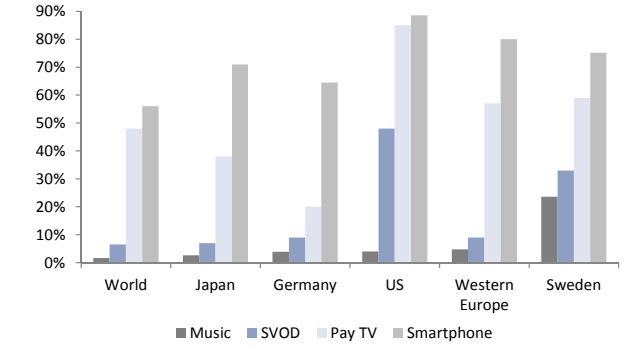
- **We forecast that paid streaming services will reach 9% of the global smartphone population in 2030** from 2% in 2015 by extrapolating the 2015 penetration growth rate of 50 bp. This level would still be below the average penetration for the top five paid streaming markets of 11% in 2015 and less than half the penetration in Sweden and Norway (over 20%), the most advanced markets. By comparison, Pay TV penetration is 48% of TV homes globally and SVOD (subscription video on demand) is 6% of broadband homes (SNL Kagan/ Digital TV Research). In the US, Pay TV and SVOD are in 85% and 48% of eligible homes compared to only 4% for music subscription.

Exhibit 2: We forecast global paid streaming penetration to reach 9% by 2030E, slightly below the top five markets today and less than half of the rate attained in Sweden
Paid streaming penetration as % of smartphone subscribers



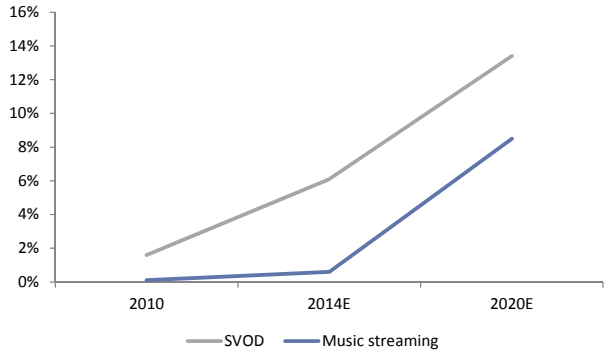
Source: IFPI, ZenithOptimedia, Goldman Sachs Global Investment Research.

Exhibit 3: Paid streaming penetration stands at 2% globally compared to 6% for SVOD and 48% for Pay TV
Paid streaming penetration as % of smartphone subscribers, SVOD penetration as % of broadband homes, Pay TV penetration as % of TV homes, Smartphone penetration as % of total population



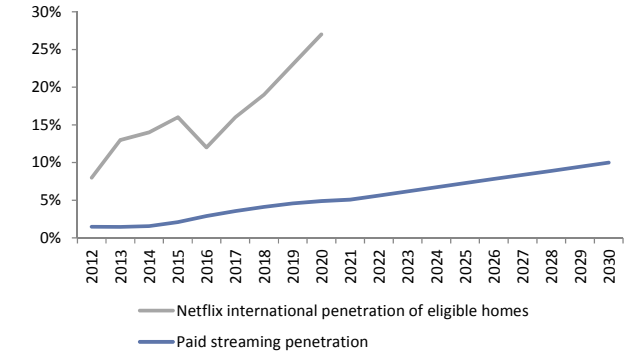
Source: IFPI, Digital TV Research, SNL Kagan, ZenithOptimedia, Goldman Sachs Global Investment Research.

Exhibit 4: We expect music streaming to follow the path of SVOD globally
Global paid streaming penetration vs. SVOD penetration



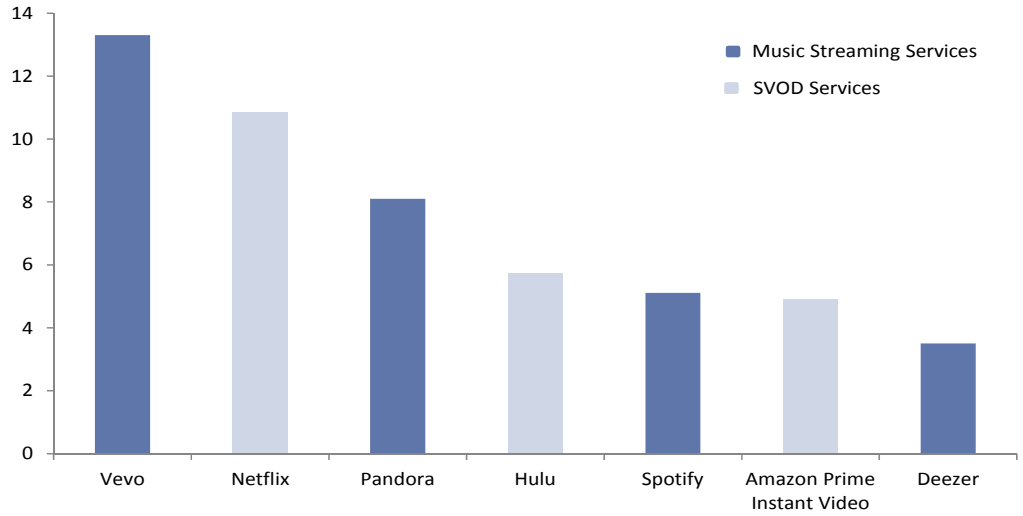
Source: IFPI, Digital TV Research, Goldman Sachs Global Investment Research.

Exhibit 5: Netflix's penetration of eligible homes doubled over three years to 16% in 2015
Global music paid streaming penetration vs. Netflix international penetration of eligible homes



Source: IFPI, Digital TV Research, Company data, Goldman Sachs Global Investment Research.

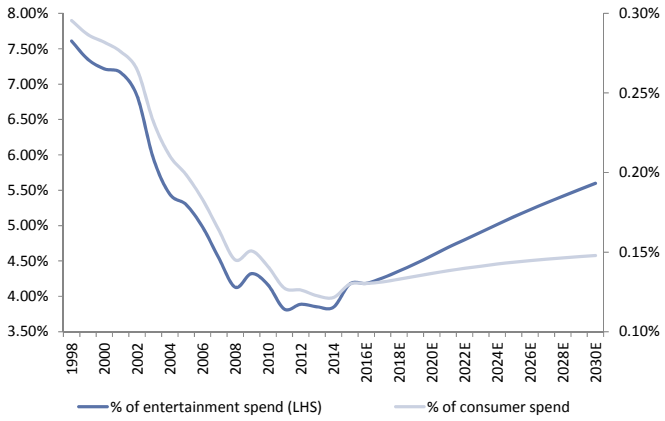
Exhibit 6: Consumption of music streaming services comparable to SVOD
Average weekly hours of streaming



Source: Press reports, Deezer.

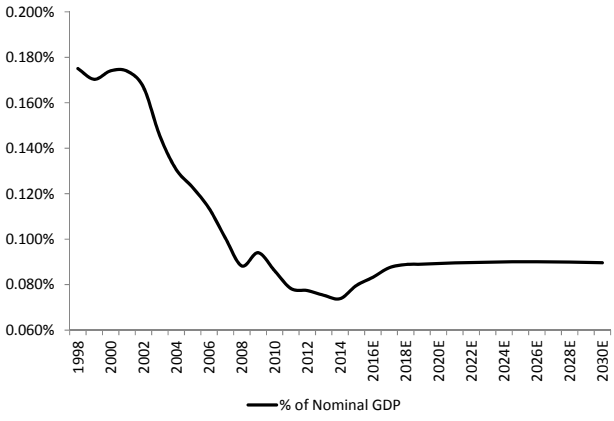
- Overall consumer spend on entertainment amounted to $1.3 tn in 2015 (Euromonitor), with music accounting for 4.2% on our estimates. We forecast that share will rise to 5.6% in 2030, still well below the 7.6% attained in 1998. Based on overall consumer spend, we expect music's share to increase from 0.13% in 2015 to 0.15% in 2030, compared to the 0.30% recorded in 1998.

Exhibit 7: Music revenue as % of entertainment spend and overall consumer spend
Entertainment includes: Recreational and Cultural Services, Newspapers, Magazines, Books and Stationery



Source: Euromonitor, Goldman Sachs Global Investment Research.

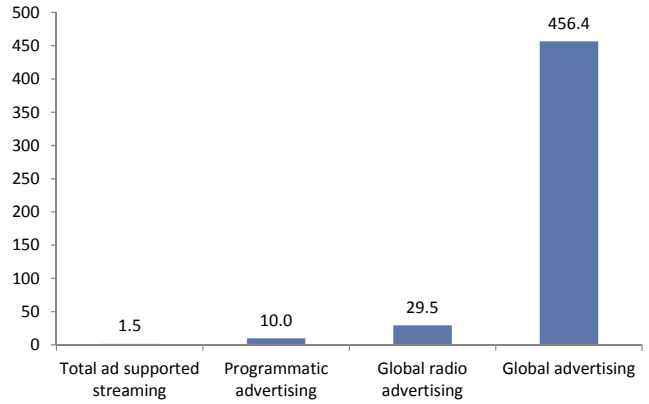
Exhibit 8: We forecast music revenue to remain below 1 pp of global nominal GDP by 2030, less than half the share it had in 1998
Global music revenues as % of global nominal GDP



Source: World Bank, IFPI, Goldman Sachs Global Investment Research.

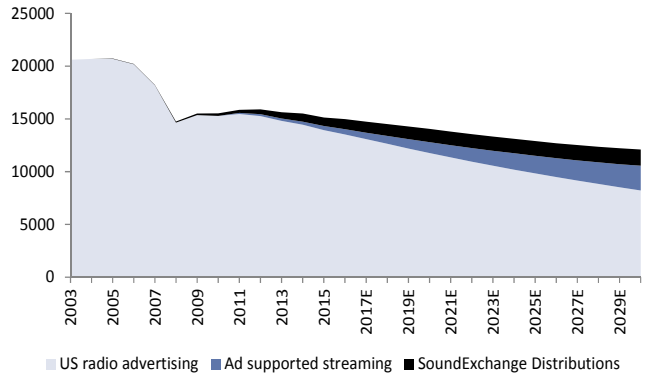
- We forecast the ad funded, streaming market (including payments from YouTube, Pandora, Spotify, etc.) to grow to $7.1 bn by 2030 from $1.5 bn currently. This compares to a global advertising market worth $456 bn and global radio advertising market worth $30 bn in 2015 as per MAGNA Global.

Exhibit 9: The global addressable market for advertising funded streaming is huge
Advertising revenue by category ($ bn)



Source: MAGNA Global, IFPI.

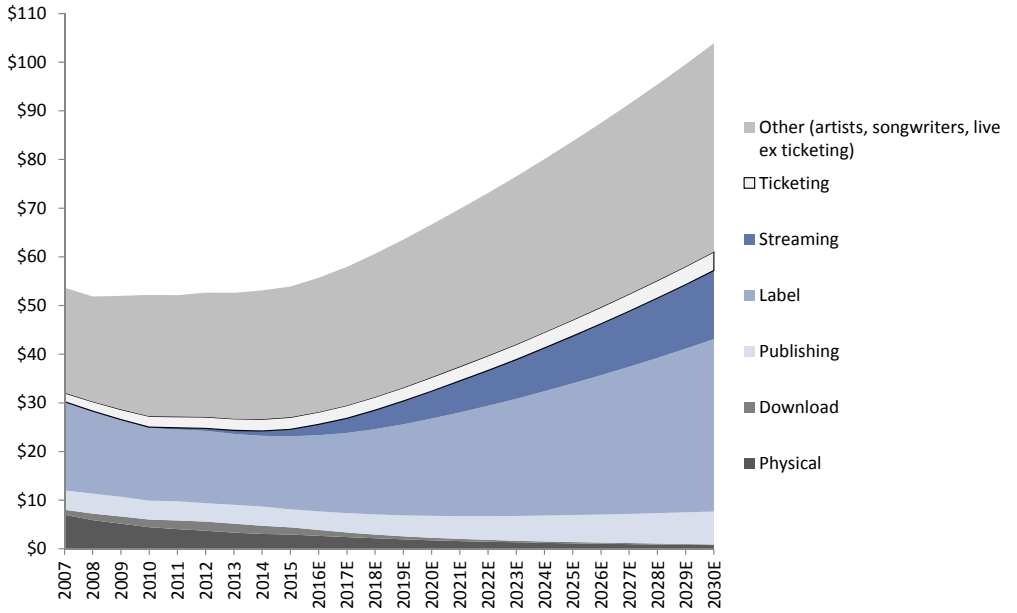
Exhibit 10: We expect digital radio and streaming services to eat into the radio ad market in the US
Advertising revenue by category ($ mn)



Source: MAGNA Global, IFPI, Goldman Sachs Global Investment Research.

Digging into the economics for stakeholders

Exhibit 11: Evolution of revenue pool for the different industry players
Revenues, $ bn

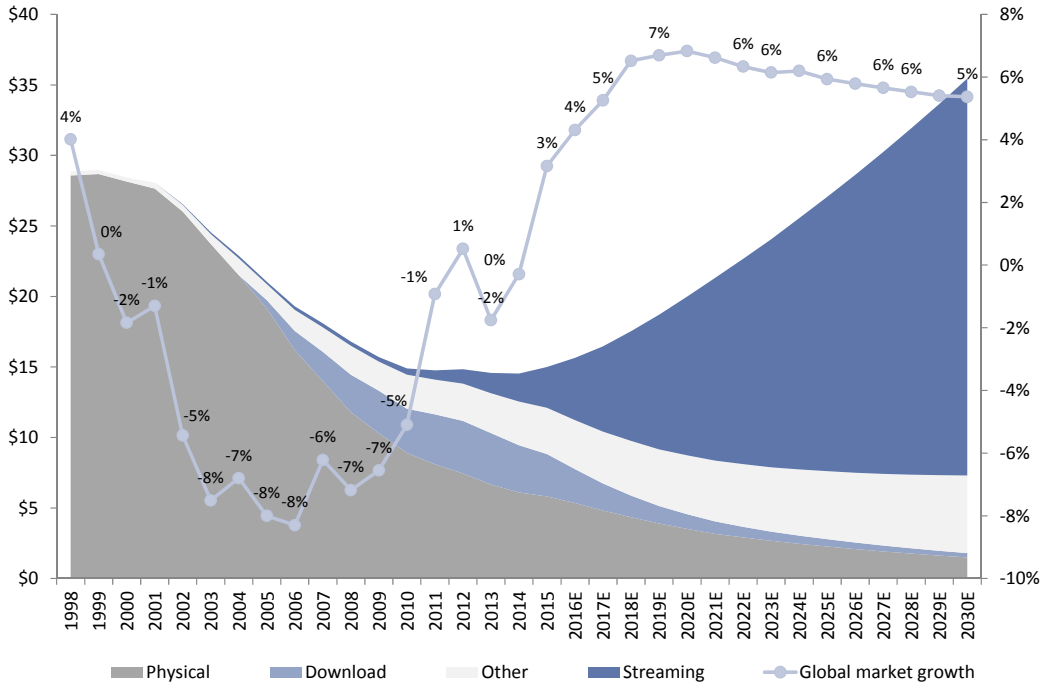


Source: IFPI, PwC, Goldman Sachs Global Investment Research.

We believe the **online innovators** (interactive streaming platforms and ad funded services) will grow to $14 bn of revenue in 2030 from $1.4 bn today, assuming they retain a distributor cut of 30%. With around 70% of their revenues being redistributed to rights owners (71.5%/ 73% in the US/internationally in the case of Apple Music according to Recode) and other COGS accounting for 10%-15%, this gives a gross margin of 15%-20% or $2-2.5 bn of potential gross profit. We assume that pure streaming players (Spotify, Deezer, Pandora, etc.) will account for 37% share of net subscriber additions over 2020-30E, Apple Music 26% and other large tech players (Google, Amazon, etc.) 37%.

For the **incumbent labels**, which receive around 55%-60% of the platforms' revenue as royalties, we forecast their revenue pool to grow to $35.5 bn in 2030 from $15 bn today mainly through streaming. This compares to the current pool at risk of $9 bn from physical and download sales. We believe profit growth could be even more meaningful as we estimate margins are 15% in streaming and download and 8% in physical at present, with the potential for streaming to grow to 20%-25% over time. This means $4-6 bn of additional profit from streaming alone bringing the total pool to $9 bn, compared to the current pool of $2 bn, of which $1 bn is from physical and downloads.

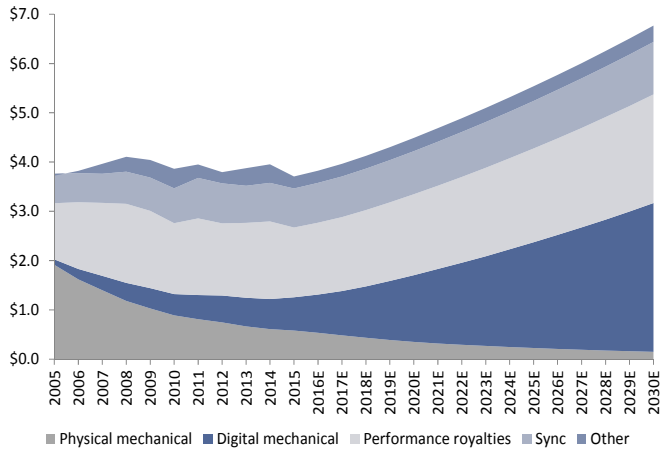
Exhibit 12: Streaming should help drive recorded music back to its 1999 peak by 2027
Global recorded music market breakdown ($ bn, LHS) vs. global music market growth (%, RHS)



Source: IFPI, Goldman Sachs Global Investment Research.

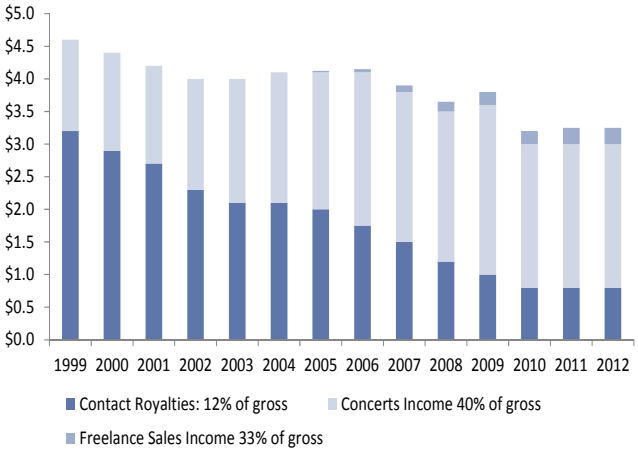
The incumbent publishers, who so far have been more insulated from digital disruption, are also likely to gain as they receive around 10% of the platforms' revenue as mechanical and performance royalties. We forecast their revenue pool to grow to $7 bn in 2030 from $4 bn in 2015, with streaming alone adding $3 bn of revenue. The main pool at risk (i.e. physical mechanical royalties) is currently worth $0.6 bn on our estimates. Assuming margin remains broadly unchanged at 30% as publishers do not benefit from the same margin uplift in streaming as the labels, we forecast profit to double to $2 bn in 2030.

Exhibit 13: Publishing – a $7 bn market by 2030 driven by streaming
Global music publishing market breakdown ($ bn)



Source: IFPI, Company data, Goldman Sachs Global Investment Research.

Exhibit 14: Artists have become increasingly reliant on touring
Sources of artists income ($ bn)



Source: Digital Music News.

For the **live music** segment, which has been the fastest growing area of the music industry, streaming could also bring a significant revenue opportunity by leveraging listening data for the marketing and promotion of live events and the possibility to connect directly with fans, therefore increasing artist revenues and improving relationships with artists. We forecast the market to grow to $38 bn by 2030 from $25 bn of revenue in 2015 according to IFPI (International Federation of the Phonographic Industry). It is estimated that 40% of tickets are currently unsold in the US (Billboard, September 4, 2010) and our analysis of Pollstar data for over 5,000 live events in the United States over the last year shows an average vacancy of 26% (29% for events at venues with fewer than 2,500 seats). Better matching the supply and demand could save up to $2 bn of revenues for the US live industry alone assuming 24 million tickets are unsold every year in the US at an average price of $67.33 (WSJ, December 16, 2010).

Artists and songwriters should benefit from the recovery of the industry through the contract royalties paid by labels/publishers and ongoing growth in live music. While much of the recent focus has been on their income from royalties, we note that recorded music has become a much less important source of revenue at 16% for the top 40 earning artists compared to touring at 80% (this is not applicable to songwriters). Artists are also reported to be earning 12% of gross contract royalties compared to 40% of the gross touring revenue (Digital Music News). We believe that music creators will gain a stronger bargaining position vs. the labels/publishers and the platforms as technology and new disruptors (alternative label/publishers) will allow greater transparency and easier access to users. This will be manifested through higher royalty payments from labels/publishers and greater control over their IP over time. We estimate labels currently invest around 30%-35% of their revenue (net of the publishing cut) in artists & repertoire and this may grow to 40% or more over time. Meanwhile, we also expect publishers' pay away to songwriters to rise to c.55%-60% over time from 50% today.

Regulation sets the stage – streaming positive for rights holders

The music industry is entrenched in a convoluted regulatory environment governing copyrights and royalties and understanding its intricacies and the potential for change is key. Our main focus will be the US, where we see the most upside for rights holders. We believe the migration of listeners to online streaming is positive for labels/artists who enjoy new sources of royalty payments in streaming as opposed to terrestrial radio where they get paid nothing. Based on IFPI data, payments of nearly $3 bn were made to labels by streaming services in 2015 and we expect that amount to increase to $11 bn in 2020 with an average annual growth rate of 30% and to reach $28 bn by 2030 which is double the current recorded music market size. Future regulatory reviews, notably of safe harbour rules applicable to YouTube and of songwriting royalties applicable to interactive streaming services, could drive further redistribution of revenue pools in favour of the rights holders.

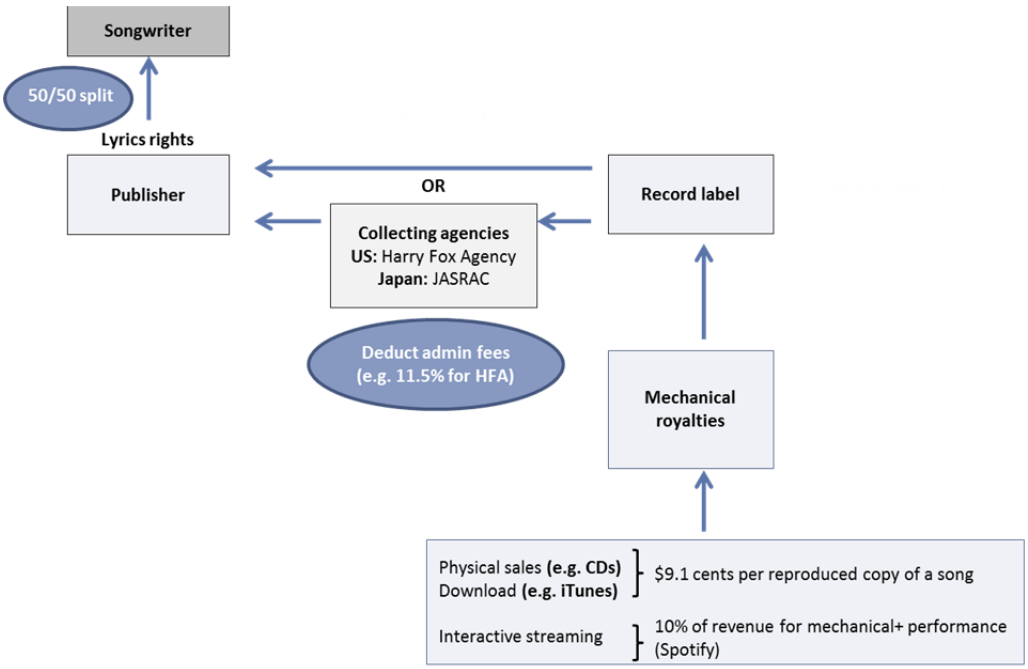
What are royalty payments?

Royalty payments are the method through which all the players involved in the production of a song make money, yet they are extremely convoluted. When thinking about royalties in the music industry, it is important to separate out the different copyrights, and so the right to royalties, owned by different players. **Songwriters** own the rights to the lyrics and melody of a piece of music, and these song copyrights are usually managed by **music publishers** (we will often refer to songwriters/publishers together). **Performance artists** own the rights to a particular recording of a song, known as the master recording, and these master recording rights are usually assigned to **record labels** for management (we will often refer to artists/labels together).

There are distinct types of royalties paid to rights owners. These royalty payments and the way royalty rates are set vary significantly depending on how the song is accessed (AM/FM vs. online radio, physical or digital purchase, streaming).

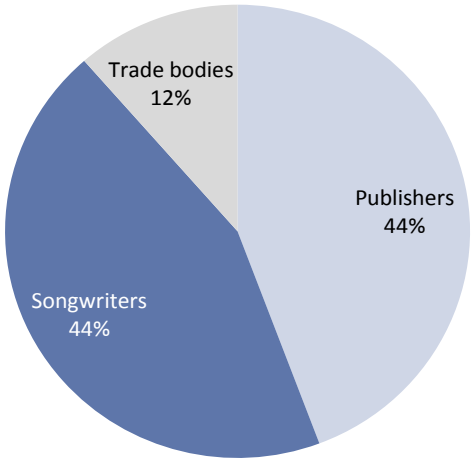
1. **Mechanical royalties** are owed whenever a song is manufactured onto a CD, downloaded on a digital music site, or streamed through a service such as Spotify. These are paid by the record label to the publisher (either directly or through a third party organization such as Harry Fox Agency in the US). The publisher then shares 50% of its royalty with the songwriter. In the US, royalty rates are set by the government through a compulsory license and are 1) either calculated on a penny basis per song for physical/download, or 2) based on a formula for interactive streaming services. Satellite and online radio such as Pandora or Sirius do not pay mechanical royalties to publishers. In most countries outside of the US, royalties are based on percentages of wholesale/consumer prices for physical/digital products respectively and negotiated on an industry-wide basis.

Exhibit 15: How do publishing mechanical royalties work?



Source: Harry Fox Agency, Royalty Exchange, Sound on Sound, Goldman Sachs Global Investment Research.

Exhibit 16: Mechanical royalties split

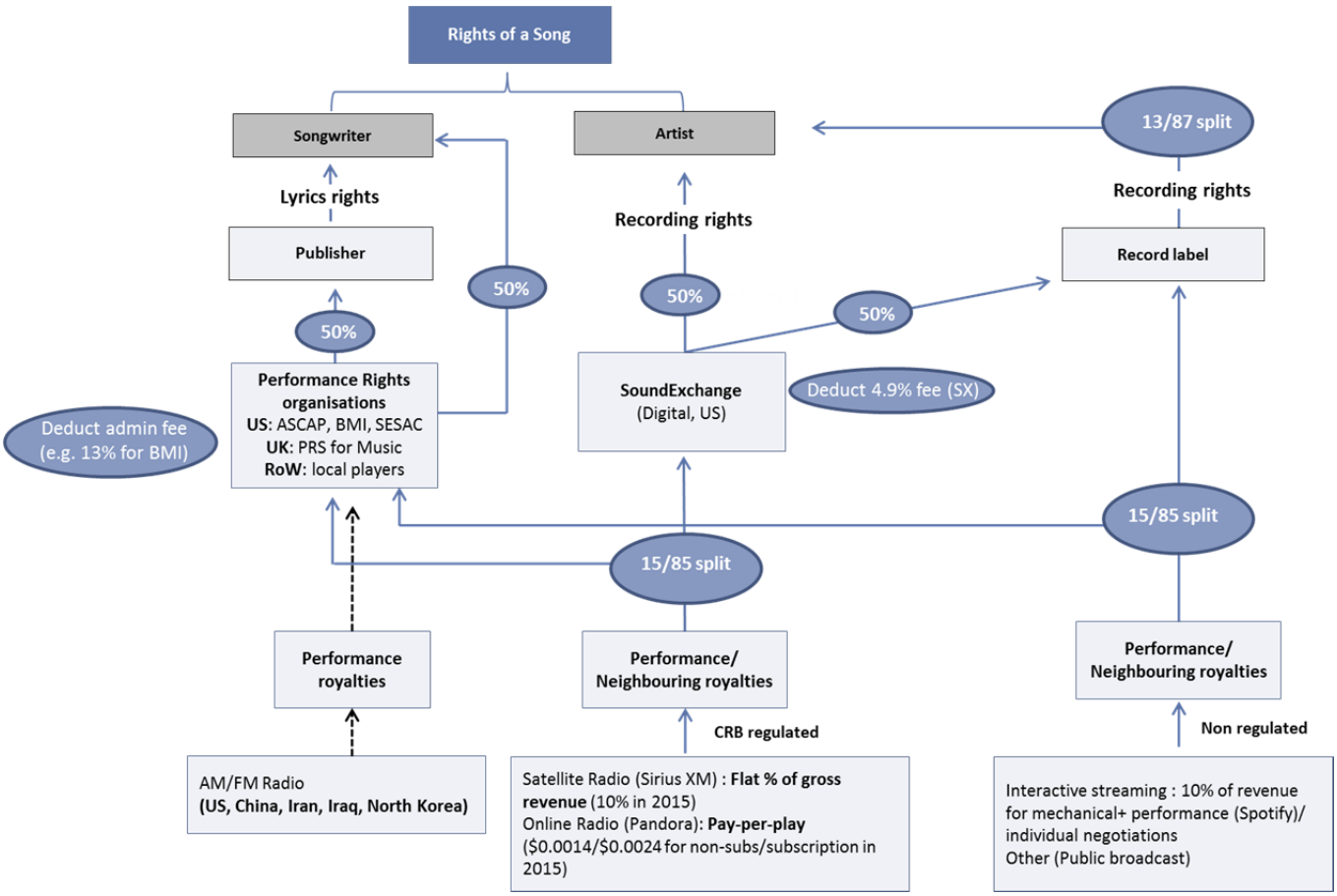


Source: Goldman Sachs Global Investment Research.

2. **Performance royalties for publishing/ neighbouring royalties for recording** are owed whenever a song is performed (radio/TV/online streaming services/live venues).

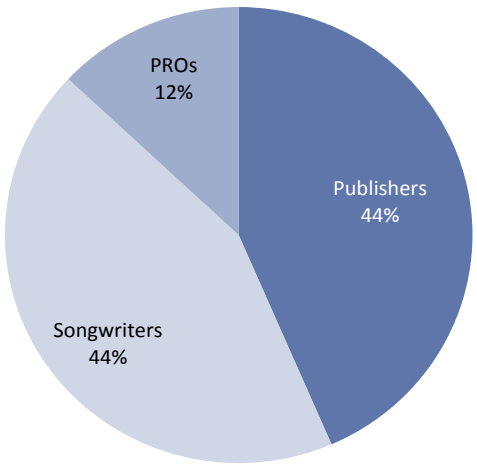
   - Songwriting performance royalties are paid to songwriters/publishers through Performance Rights Organizations (PROs) and collection societies (after a 10%-20% administrative fee).
   - Recording neighbouring royalties are paid to the recording artists and labels (either directly or through SoundExchange "SX" in the US). **In the US however, artists/labels only get paid for digital performances (i.e. satellite/online radio, interactive streaming services) and not by terrestrial radio** as antiquated US legislation exempts terrestrial broadcasters from paying royalties for the use of the master recording.

Exhibit 17: How do performance royalties work?



Source: SoundExchange, Royalty Exchange, PRS for Music, Company data, Goldman Sachs Global Investment Research.

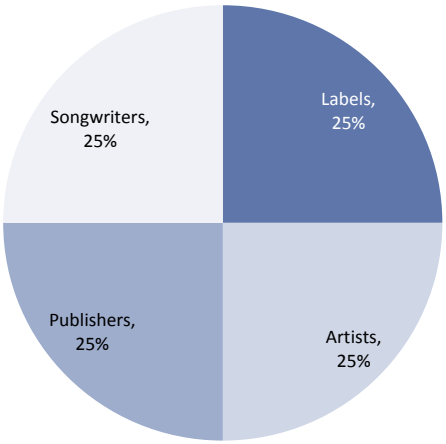
Exhibit 18: Terrestrial radio does not pay any performance royalties to labels/artists
Estimated distribution of terrestrial radio performance royalties in the US



Source: Goldman Sachs Global Investment Research.

3. **Synchronisation or "sync" royalties** are paid to songwriters/publishers and record labels/artists for use of a song as background music for a movie, TV programme or commercial, video game, etc. There is no explicit rate that defines the compulsory percentage of royalty that must be paid. This will mostly depend on the commercial value of the work to those who want it and on the media to be used. Sync royalties are usually equally split between labels, artists, publishers and songwriters.

Exhibit 19: Estimated distribution of sync royalties to rights holders



Source: Goldman Sachs Global Investment Research.

Artists/Labels are the main beneficiaries of the move to streaming

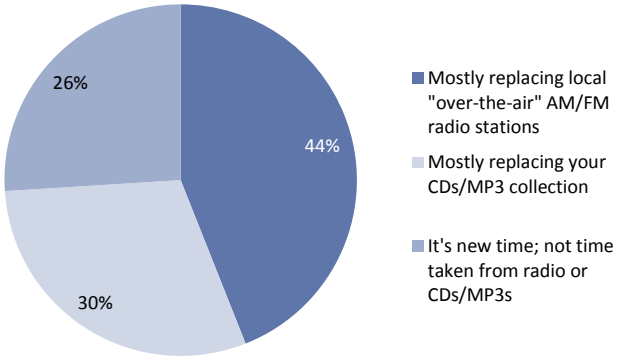
The evolution of consumption from terrestrial to digital on one hand, and from ownership to access on the other, has profound implications for the rights holders.

1. **The move from analogue to satellite or internet radio services creates a new revenue stream for artists/labels who get paid nothing by terrestrial radio.**

The US is one of the few countries where terrestrial radio operators are exempted from paying any performance royalties to labels and artists (although they are required to pay the publishers and songwriters). This situation is inherited from the long-standing argument that labels and artists receive important free promotion through radio play. With analogue radio's share of listening declining and other meaningful discovery platforms emerging such as YouTube, social media or streaming services' playlists, we see a strong case for this rule to change over time but, as a US music lawyer puts it, it will likely face strong lobby opposition. In the meantime, we expect to see more bilateral commercial agreements (see later section "*3. Compounding this already positive picture is the move by many analogue operators to sign deals with labels to receive preferential royalty rates in order to launch their own digital services"*).

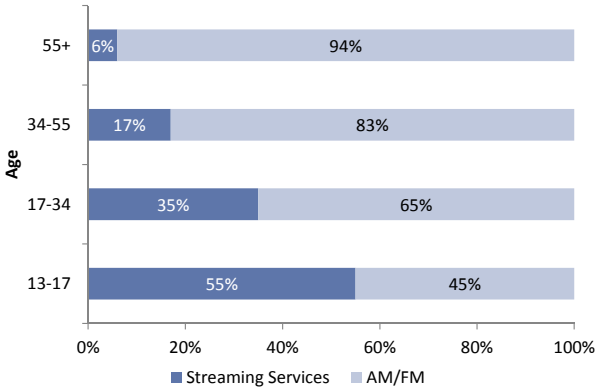
With the introduction of streaming services and online radio, US legislation evolved to create a statutory license for digital audio transmissions and require the payment of performance royalties by such services under the Digital Performance in Sound Recording Act of 1995 and the Digital Millennium Copyright Act ("DMCA") of 1998. The ongoing shift of listeners from terrestrial radio to online radio and streaming services is therefore incremental for labels and artists.

Exhibit 20: Nearly half of digital radio listening is displacing AM/FM in the US
Survey, Summer 2013



Source: Edison Research Streaming Audio Task Force, Summer 2013/ IAB.

Exhibit 21: While AM/FM consumption remains dominant overall, streaming services are increasingly popular for younger age groups
Daily listening to streaming service vs. AM/FM by age group, US, 2014



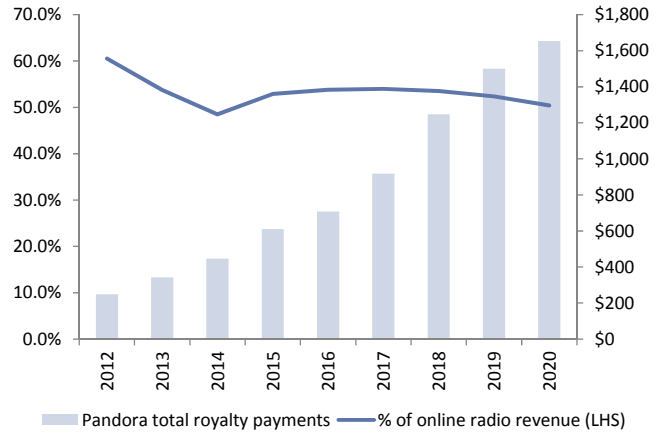
Source: Activate.

The rate paid by non-interactive services such as Sirius or Pandora is set every five years by the Copyright Royalty Board (CRB), a panel composed of three federal judges. Anyone regulated by the CRB splits performance royalties on fixed terms with 50% going to the label, 45% to the artist, and 5% to the Musicians' Union after SoundExchange fees are deducted. In contrast, on-demand streaming services such as Spotify or Tidal negotiate their rates on the free market.

Leading digital radio service Pandora has historically paid on a pay-per-play basis under CRB rules. The latest CRB ruling for 2016-2020 set these rates at $0.17 and $0.22 for ad-funded and subscription services respectively in 2016, and these will be adjusted annually to reflect changes in the Consumer Price Index for 2017-20. However, Pandora has just negotiated direct deals with record labels, and the terms of those deals will supersede the CRB ruling. The exception is the deal with Warner Music, under which Warner will continue to distribute the artists' share of the statutory ad-funded rates through SoundExchange. Our US Internet team expects Pandora to pay $1.65 bn in total content acquisition costs in 2020 (50% of its online radio revenue) up from $610 mn in 2015 (45% of its online radio revenue excluding one-offs). The increase is primarily driven by the launch of Pandora's on-demand offering in 4Q16, from which the company expects to pay 65-70% of revenue.

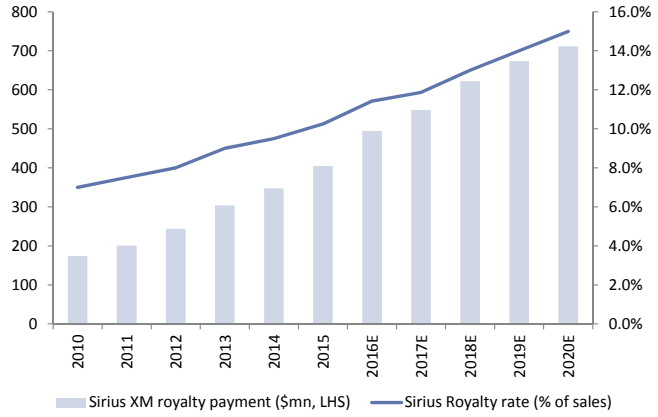
Leading satellite radio operator Sirius XM pays a flat fee out of its gross revenues. This rate has progressively increased by c.50 bp pa from 7.0% in 2010 to 10.0% in 2015 and is set to rise to 11.0% by 2017. Sirius XM paid royalty fees of $405 mn in 2015, up from $174 mn in 2010 – an 18.5% CAGR (vs. a 7.9% CAGR in subscriber growth). Our US Telecoms team forecasts these fees to rise to $712 mn by 2020 at a CAGR of 12%. On January 5, 2016, CRB started a new proceeding to set music royalties for the 2018-2022 five-year period.

Exhibit 22: We forecast Pandora's royalty fees to increase to $1.65 bn in 2020 from $610 mn in 2015



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 23: We forecast Sirius XM's royalty fees to increase to $712 mn in 2020 from $405 mn in 2015



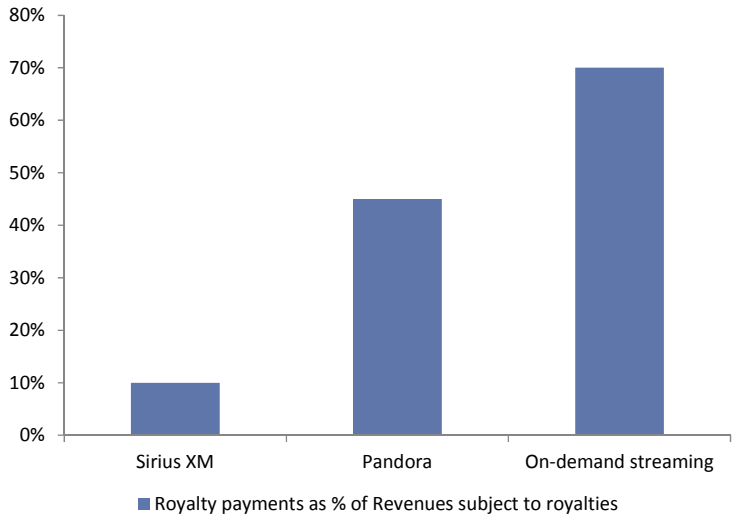
Source: Company data, Goldman Sachs Global Investment Research.

2. In our view the rise of on-demand streaming services is even more positive for rights owners as compared to satellite/internet radio

Streaming services pay away a higher share of their revenue to rights holders than satellite and online radio. As on-demand streaming royalties are negotiated on the free market, streaming services generally pay c.70% of their revenues to labels and publishers (90/10 split) similar to the levels physical and digital retailers pay. Apple Music pays a slightly higher rate of 71.5% in the US and 73% elsewhere according to Recode. Pandora has stated that its on-demand offering will pay 65-70% of associated revenue to rights holders, and overall the company pays out 54% of music revenue to rights holders. Prior to signing the direct deals with rights holders, Pandora paid c.45% of its online radio revenues royalties in 2015 (excluding one-offs). Sirius XM, by contrast, pays away around 10% of their revenue as royalties as they benefit from lower CRB-regulated rates.

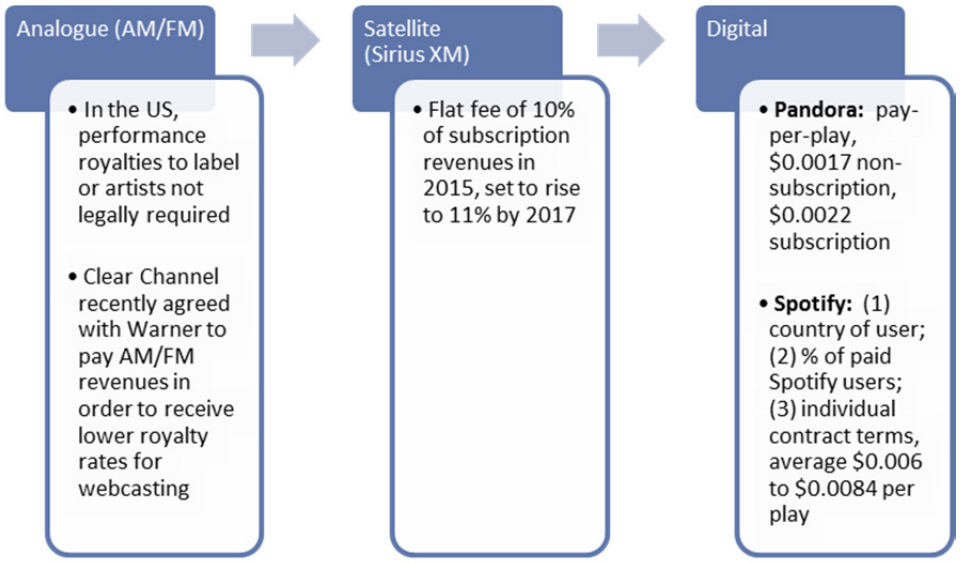
Based on reported streaming revenue of $1.9 bn in 2015, this implies that roughly $1.361 bn was paid as royalties to labels/publishers in 2015 alone.

Exhibit 24: On-demand streaming services pay away around 70% of the revenue compared to 10% for Sirius XM and 45% for Pandora radio in 2015



Source: Company data, Goldman Sachs Global Investment Research.

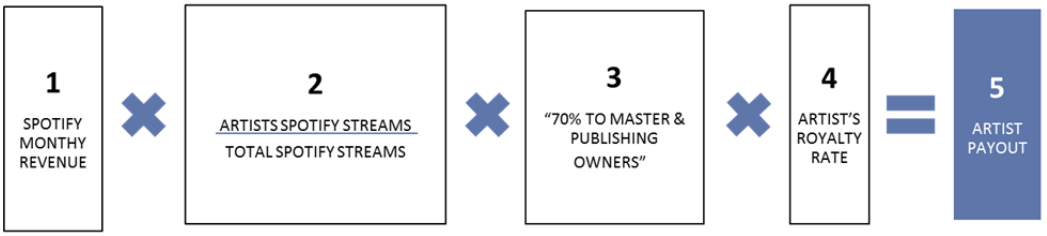
Exhibit 25: Performance royalties for labels/artists more favourable in a digital world



Source: Company data, Goldman Sachs Global Investment Research.

On-demand streaming rates however vary significantly by individual contract and market. For instance, Spotify's royalty calculation is not a fixed pay-per-play and depends on: 1) the country in which the user is based; 2) Spotify's number of paid users as a percentage of total users; and 3) individual contract terms with the label and/or artist. The company indicates the average per stream payout to rights holders is between $0.60 and $0.84 per 100 streams.

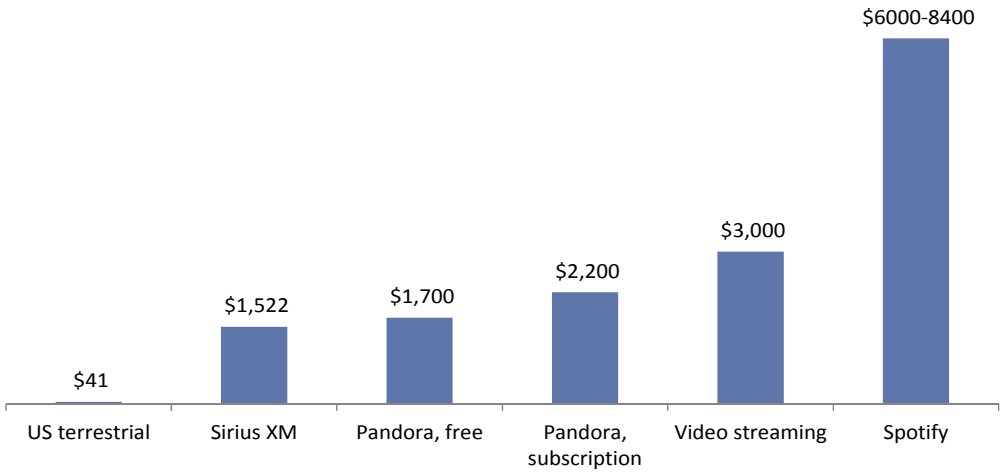
Exhibit 26: Spotify royalty system



Source: Spotify.

Streaming rates are higher on a per-user basis. Much has been made of the dilutive nature of streaming services, with artists and labels arguing they do not receive equitable compensation compared to satellite radio. Based on Sirius XM's royalty payments of $500mn in 2015, and an average song length of 3.5 minutes, we calculate that the implied royalty rate per play is $33.3, compared to fractions of a penny for Spotify and Pandora. What this argument ignores, however, is that Spotify is a one-to-one service, while satellite radio is a one-to-many (Sirius has 31 mn subscribers). Controlling for the number of users listening to a song, both Pandora and Spotify pay more on a per-user basis. We estimate that a song played on Sirius is listened to by 0.07% of Sirius' 31 mn subscribers, which would imply a cost per play per million subscribers of $1,522, which is 10%-30% lower than Pandora's historical per-play-per-million users rate of $1,700-2,200 and around 75%-80% lower than Spotify's per-million streams rate of $6,000-8,400. As such, we see the migration to online streaming services as incremental to the market.

Exhibit 27: The shift to digital consumption drives higher royalty payments in the US
Royalty per million streams, 2015

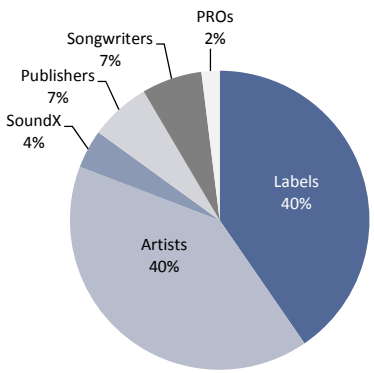


Source: Spotify, Goldman Sachs Global Investment Research.

Pandora's move to on-demand streaming presents upside for rights holders. Pandora recently announced direct licensing agreements with record labels to launch an on-demand streaming service in the US in 2H16 alongside its existing digital radio service. Under the terms of the deal with UMG, Sony and independent labels, Pandora will pay away 65%-70% of its subscription revenue to rights holders (while the CRB arrangements led to a pay away rate in 1H16 of roughly 45% of its online radio subscription revenue). In conjunction with these direct deals, Pandora also negotiated new terms for its ad-funded online radio service and will pay away a LPM (licensing cost per 1,000 listener hours) of around $33 from roughly $31 previously. The terms of the deal with Warner on the subscription service are unknown, but we would expect them to be similar to the other labels.

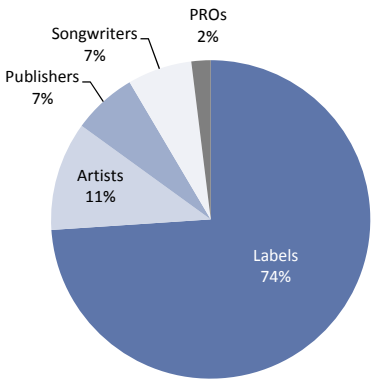
With Pandora targeting $1.3 bn of subscription revenue by 2020 without cannibalizing its existing ad-funded radio business, this presents significant upside for the rights holders given the expansion of Pandora's addressable market and the higher royalties in on-demand streaming as opposed to online radio. This will disproportionately benefit the labels, who typically receive 74% of the royalties from on-demand services compared to 40% from online radio, while artists' share will move to 11% from 40% (we argue however that artists' absolute royalties will still be higher in the on-demand world).

Exhibit 28: Estimated distribution of Pandora's performance/neighbouring royalties



Source: Goldman Sachs Global Investment Research.

Exhibit 29: Estimated distribution of interactive streaming performance/neighbouring royalties in the US

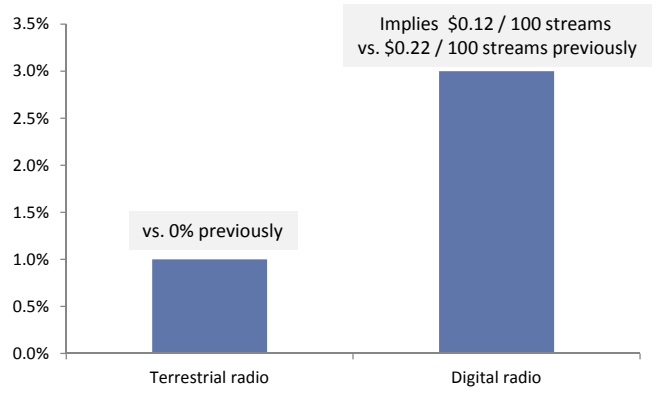


Source: Goldman Sachs Global Investment Research.

3. **Compounding this already positive picture is the move by many analogue operators to sign deals with labels to receive preferential royalty rates in order to launch their own digital services**.

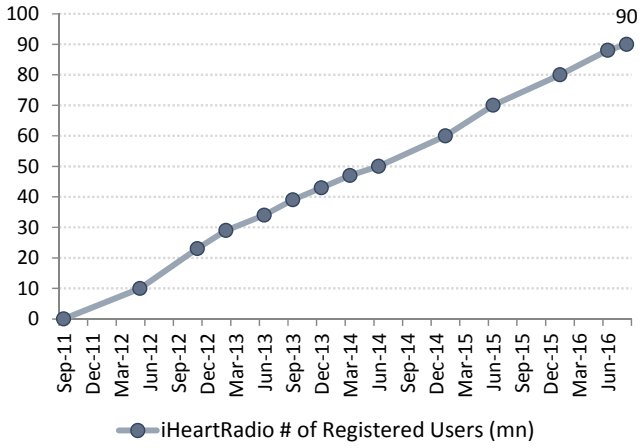
In response to the migration of listeners from analogue to digital platforms, US AM/FM radio operator iHeartMedia "IHRT" launched an online radio service iHeartRadio in 2008 under the same CRB regime as Pandora. The website garnered 90 mn of registered users as of August 2016. In 2012 IHRT's parent company Clear Channel struck an unprecedented deal with label Big Machine whereby IHRT would pay an undisclosed percentage of its advertising revenue for digital *and terrestrial* radio play, despite being legally exempt, compared to the then digital royalty per play of $0.002. This was very favourable for rights holders, as terrestrial accounted for 98% of IHRT's ad revenue and fees were said to be split 50/50 with artists without any SoundExchange deduction of 4.9% (Billboard, June 5, 2012). In 2013, IHRT sealed another important agreement with Warner Music to pay royalties for terrestrial airplay in return for lower royalties for online streaming. Warner artists now receive extra promotion on IHRT's 850 terrestrial stations and are being paid more, as Forbes reported that Clear Channel will pay WMG 1% of advertising revenue for terrestrial broadcasts, and 3% for digital. The return for Clear Channel is a discounted rate on its digital streams of Warner artists' music, down from $0.22 per 100 streams to $0.12 per 100 streams (Forbes, September 16, 2013). For comparison, Pandora in 2015 paid $0.14 per 100 streams. More recently, IHRT announced its intention to launch an interactive streaming service iHeartRadio All Access together with an ad-free radio listening service in 2017. We view this as a positive for the labels given 1) they receive 55%-60% of revenues as royalties from interactive streaming services but nothing from US terrestrial radio, and 2) this will give labels the opportunity to include a fee for terrestrial airplays in their direct deals as illustrated by the IHRT/Warner Music deal.

Exhibit 30: IHRT agreed to pay WMG 1% of its ad revenue for terrestrial airplays, despite being legally exempt, in exchange for discounted rates in digital
% of advertising revenue paid for terrestrial and digital radio plays



Source: Forbes.

Exhibit 31: IHRT's iHeartRadio service has seen a surge in the number of users
Number of registered iHeartRadio users (mn)



Source: iHeart.

Songwriters/publishers also benefit but to a lesser extent

1. **Unlike artists/labels, songwriters/publishers are already getting paid by terrestrial radio for performance royalties in the US, so do not benefit to the same extent from the shift to satellite radio and online streaming.**

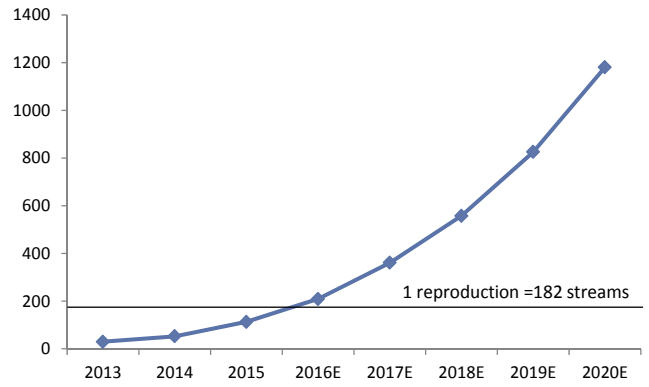
2. For mechanical royalties in the US, streaming currently offers lower royalty rates than physical/downloads. But there is upside from higher streaming consumption and the upcoming CRB review.

Publishers/songwriters currently receive a $0.091 mandated rate per reproduced copy of a song (CD, vinyl, MP3, etc.) independently of whether that copy is sold. Outside of the US the rate typically varies in the range 8%-10% of wholesale prices for physical products/consumer prices for digital products, according to digital music distribution company TuneCore. When moving to interactive streaming services, the government-mandated rate is at least 10.5% of the gross revenue after deduction of the payments to collection societies such as ASCAP (the American Society of Composers, Authors and Publishers), BMI (Broadcast Music, Inc.) and SESAC (The Society of European Stage Authors and Composers).

This would imply average payment per 100 streams of about $0.05 according to music royalty collection company Audiam. We calculate this implies that 182 streams of one song would be needed to equate to the mechanical royalty generated from one reproduction. Using the Recording Industry Association of America (RIAA) and Nielsen data for the number of physical and digital copies sold and the number of audio streams consumed, we calculate that there were 113 more audio streams consumed than physical/digital copies sold in 2015 meaning streaming is currently dilutive. However, we forecast that ratio to grow to 209:1 in 2016 and 1180:1 by 2020. Even though the growth in streaming value does not follow the growth in consumption (Spotify's paid streaming ARPU does not depend on individual consumption, although ad-funded revenues do), we believe the increase in streaming consumption will be able to compensate for lower royalty rates. Warner Music's 2015 10K form reveals that its revenue from digital mechanical royalties exceeded physical for the first time in 2015.

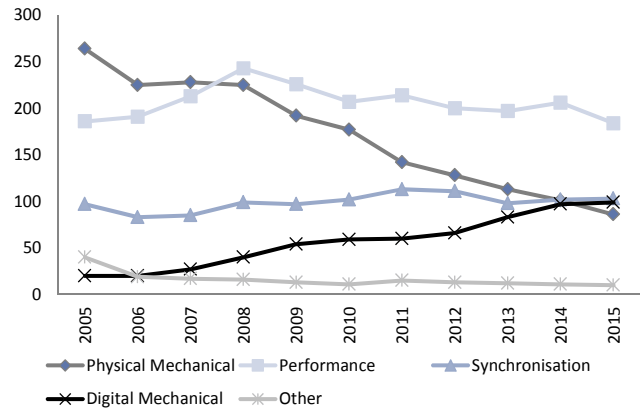
The upcoming CRB review of songwriting mechanical rates applicable to interactive streaming services such as Spotify or Deezer could totally change the way songwriters/publishers are getting paid (see next section).

Exhibit 32: 182 streams of one song currently needed to match the revenue from one unit sale – we forecast the number of streams in comparison to unit sales to exceed 182 from 2016



Source: Goldman Sachs Global Investment Research.

Exhibit 33: Digital mechanical royalties are already exceeding physical for Warner
Warner/Chappell breakdown of publishing revenue, $ mn



Source: Warner Music Group data.

3. In Japan, the online shift is positive for songwriters/publishers, as physical mechanical royalty rates are typically 1%-2% lower than digital to compensate for their higher manufacturing costs known as the "record cover fee".

Future regulatory changes could present upside for rights holders

1. **The US review of safe harbour rules and implications of the recent EU Copyright proposal will be important in addressing the value gap between the usage and monetization of music on platforms such as YouTube.**

What are safe harbour rules? These provisions exempt passive, neutral hosting platforms from copyright infringement liability for the actions of their users. Put another way, online service providers, including YouTube and internet service providers, are not responsible for vetting whether or not the users are putting copyright cleared content on their platform. When rights holders find evidence of copyright infringement, they have to submit a formal notice to YouTube for instance to request a copyright takedown. To its credit, YouTube has a finger printing system called Content ID, which enables labels and artists to identify and manage their work and entitle them to a share of the advertising revenue (if any).

Why do they matter? Many artists and industry bodies have complained about YouTube's use of those safe harbours which give it an unfair advantage in negotiations with rights holders. For instance, a label which does not sign a licensing deal with YouTube will have to actively monitor that its content does not appear on YouTube and if so request it to be removed. YouTube also shares 55% of its music ad revenue with rights holders (according to Music Business Worldwide "MBW"), with labels receiving 45% and publishers 10%. This compares to the standard 70% payout rate from other non-regulated platforms (iTunes, Spotify, etc.), with labels receiving 60% and publishers 10%. This situation has resulted in a rising **"value gap"** between the amount of streams consumed on YouTube and their monetization for rights holders. YouTube accounted for 40% of overall music listening according to Apple Music's Jimmy Iovine, with c.90% of the 900 mn ad-supported music users reported by IFPI, and yet generated only 4% of global recorded music revenues ($634 mn in 2015), which is lower than the revenues from vinyl sales. In contrast, paid streaming revenues were almost 4x higher at $2.3 bn in 2015 and were generated by only 68 mn paying users.

What's next? The EC just came out with its highly anticipated draft Copyright Directive. The new proposals will require platforms such as YouTube to enter negotiation with rights holders in good faith and put in place "appropriate and proportionate" measures to identify and remove unlicensed copyrighted content, therefore putting greater responsibility on/demanding more proactivity from the platform owners. Previously the likes of YouTube had to wait for a formal takedown request from rights holders – this will still be the case, however, if no agreement has been reached. We believe that YouTube should be less impacted than other services as it already has effective content recognition and removal processes in place. Nonetheless, as the EC puts it, this should "reinforce the position of rights holders to negotiate and be remunerated for the online exploitation of their content on video-sharing platforms such as YouTube or Dailymotion." These proposals will still need to go to Parliament and individual member states for approval, while the effective implementation of such measures remains unclear and is likely to take time.

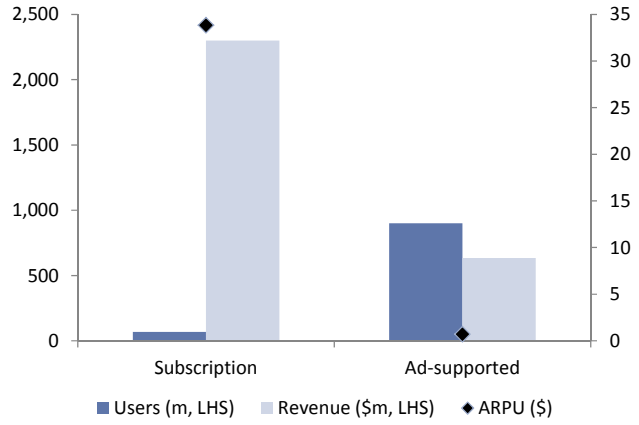
Separately, the US Copyright Office is currently reviewing copyright rules including safe harbour provisions (also called DMCA 512 in the US) with a decision expected in 2017. In April 2016, 400 artists, songwriters and music bodies sent a letter to the US Copyright Office pleading for reforms to the DMCA. They were followed by another 180 artists and songwriters (including Taylor Swift, Lady Gaga, Paul McCartney, etc.) in June.

2. **The CRB is currently engaged in proceedings to set the new mechanical songwriting royalty rates applicable to interactive music services for 2018-2022, with a decision expected by end-2017.**

This review will be much in focus, given Apple's recent proposal that all interactive streaming services should pay a statutory rate of $0.091 per 100 streams. Note that this rate would not apply to Apple given that it has direct deals with publishers in place. The current rate is set as a percentage of revenue and varies depending on whether the user is

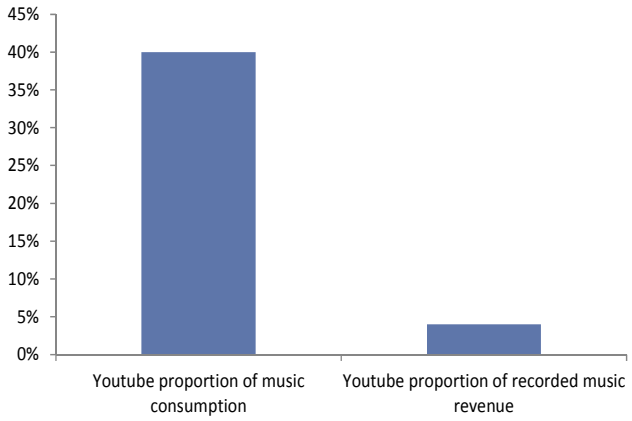
a subscriber or non-subscriber – on average it implies around $0.05 per 100 steams according to Audiam. A move towards a higher, unified rate would be more damaging for freemium streaming services, although positive for songwriters/publishers.

Exhibit 34: Ad-funded services (mainly YouTube) generated 4x less revenue than paid streaming despite 13x more users



Source: IFPI.

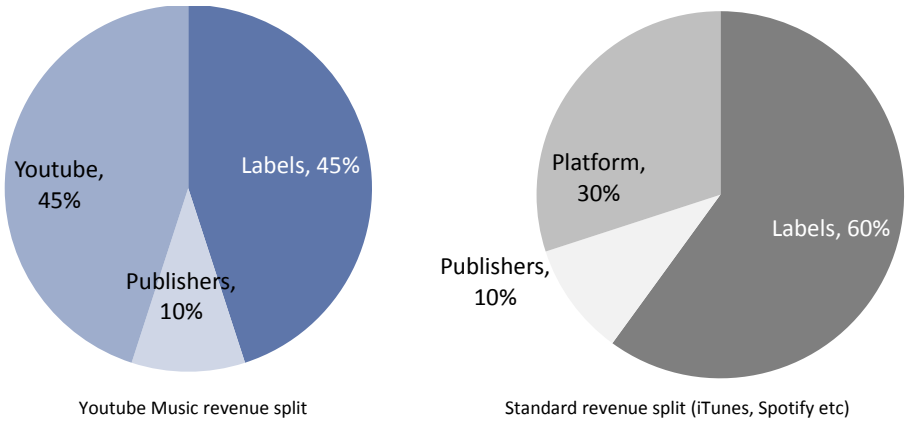
Exhibit 35: The value gap: YouTube accounts for 40% of music listening but 4% of recorded music revenue



Source: Apple, IFPI.

Exhibit 36: Labels receive a lower share of royalties from YouTube than from other digital services

Estimated split of YouTube vs. industry standard music royalties



Source: Music Business Worldwide, Press reports, Goldman Sachs Global Investment Research.

3. Potential changes to copyright protection of pre-1972 sound recordings.

Songs recorded before February 15, 1972, are currently not protected by US federal copyright law, but are protected under state law in some jurisdictions. This resulted in CRB-regulated entities such as Pandora and Sirius XM not paying royalties for their use. In 2015, Pandora and Sirius XM both agreed to settle with the major labels for $90 mn and $210 mn, respectively, for the use of such rights until end-2016 for Pandora and end-2017 for Sirius XM. Unless regulation evolves to include pre-1972 recordings in US federal law, the two players will need to extend their deals with labels to keep playing those songs.

4. The CRB has commenced proceedings to set new royalties for digital performance of sound recordings to be paid by satellite radio service Sirius XM for 2018-2022.

An interview on EU music regulation with…

John Enser, Head of Music and Partner, Olswang

John is Head of Music and a Partner in the Media Team at international law firm Olswang LLP. Acknowledged as an expert in all of the leading directories of lawyers, his client-base includes record companies, broadcasters, other content aggregators and distributors and mobile operators as well as companies that invest in and lend to the sector.

What are the main regulatory intricacies in Europe?

One of the key challenges is fragmentation: whilst on the recording side you can do deals that cover the entire European landscape by doing deals with the majors and Merlin (which represents the indie labels), on the publishing side, it is exceedingly complex and an ever moving picture because of the role of the collecting societies, who control both the performing right and, often, also the copying right, both of which are needed for digital exploitation. In many countries, a collecting society is granted exclusive rights directly from the composers, so music publishers aren't in a position to aggregate rights. That leaves a pretty messy picture where, to launch a pan-European service you need to do around 30 deals on the publishing side – and realistically you can't launch a service without getting the vast majority of the repertoire. That clearly is good for the big players and gives a significant barrier to entry. This is part of the reason why Pandora packed up and went home some years ago.

How are royalties set in Europe?

Contrary to the US, in Europe it is more of a free market, but it does vary from country to country. In some countries there are tribunals, arbitration bodies, like the CRB in the US although not as powerful, that set the rates. The UK is probably the closest structure to the US. In most of continental Europe, the collecting societies often have some degree of royalty rates review by some form of government agency with various degrees of rigour and independence.

How does the safe harbour regime work and how does that benefit YouTube?

The way it works effectively is that, because YouTube doesn't have editorial control, if somebody else posts a video onto YouTube, their only obligation is to take it down once they're on notice. They don't have to do anything until then and they don't have to stop that going back up again. So, they have the Content ID tool which enables rights holders to make their own choices based on whether the rights holder wants the material removed or is willing for it to be left in return for a revenue share. But the problem is that if you choose not to be part of the Content ID scheme, all that you can do is to have your material taken down and it keeps coming back up again. YouTube argues that they do license their rights, but, from the label perspective, it is always with one hand tied behind their back, as it is under the threat that YouTube will just use the safe harbour. Sure, they do have deals with all the majors, but the economics of those deals are different from what they would be if there was no safe harbour regime.

The safe harbour works in a similar way in respect of true pirate sites, Pirate Bay and the like, where the music industry want to make it harder for people to find those sites. For that reason, the music industry has sent billions of take down notices to Google – that's about the search engine, rather than YouTube – if you search for the newest Rihanna single, the chances are that 4 out of the top 10 research results will be pirate pages. So, the debate is partly about Google and search engines, about them taking more responsibility to get rid of links to pirate sites and to keep those links down. The YouTube issue is slightly different but it is very similar because the argument is if you don't play along with YouTube's way of doing things, the only thing you can do is send DMCA complaint notices and have the material disappear only to pop back up again. So your choices are to either get rid of it or monetize it on their terms.

The EC just released its draft copyright package - what could the implications be?

Platforms making available large amounts of copyright material which is uploaded by users will be required to enter into negotiations with rights owners in good faith and to put in place "appropriate and proportionate" measures to ensure the functioning of those agreements with rights-holders in relation to the use of their works. Some platforms, like YouTube, have these processes in place already but not all do and even those that do are subject to on-going criticism for not ensuring that infringing content stays down. The Commission believes that the fact that many platforms benefit from the safe

harbour, meaning effectively that they are not the ones responsible for communicating the copyright works to the public, makes for an uneven negotiation between platform and rights-holder. The notice and take down procedures that emanate from the E-Commerce Directive will continue to apply if no agreement is in place or the content cannot be identified using "appropriate and proportionate" measures. This will clearly impact on the Google search example mentioned above, but how far it would move the balance of power between the labels and YouTube is not very clear. Judging by the welcome the draft received from the music industry, it is seen as a move in the right direction.

The draft package now falls to be considered by the so-called Council of Ministers (the representatives of the governments of each Member State) and the European Parliament. Both processes are likely to lead to extensive amendments to the draft. The Parliament is likely to want to protect the platforms, in what they see as the consumer interest, while the Member States are more inclined to support the industry (and that mostly means the indigenous content industries who are seen to be threatened by the largely US-headquartered platform operators).

We are therefore talking about a period from 18 months to up to 3 years before these things actually become law in individual member states. It is hard to see YouTube or other intermediaries doing very much ahead of any change in the law, unless they think that by doing so, they might stave off a more onerous regime.

Can artists force transparency to be able to show the economics and flow of payments?

To some extent I think it will happen. Again, the draft proposals of the European Commission include specific obligations which will increase transparency (if they survive the legislative process). There has been a lot said by artists about this, which isn't always necessarily reflective of the way deals work. As an example, if you have a deal let's say between Spotify and a major label, there will be a pot of money that Spotify allocates to rights holders. The label will get a share of that based upon the usage and plays of that label's repertoire. The area where the artists get very excited about is the chunks of money that the labels get that are not directly allocated to plays – whether that's a marketing advance or other fees. The transparency concern is about how much of that is really money that is being paid in respect of artists' repertoire that the artists are not getting their share of.

Labels will say that they are being transparent with their artists and the artists just don't trust them. Part of it is the perception that the amount of money flowing through from streaming services is just not big enough. It is not about the labels hiding money, it is about labels trying to support the migration of their business model and recognizing that, for them in order to do that, they will not get the like-for-like amount they were getting for an iTunes sale.

How easy is it for an artist to change labels or go direct to a streaming service?

Typically artist deals don't last more than 3 or 4 albums, that's down from in the worst days 7 albums. Subject to the fact that once you've recorded the first two, you renegotiate the terms and you give the label another two so you're always 4 albums away from the end of your deal. But it also means that there is an end in sight, if you decide you don't like your label, you don't want to renegotiate after two years, you let it run and then you go away. The difficulty with that is that your old label gets to keep the existing material. So the challenge you then get is that your new material is going out with a different label, but the old label is sitting on the stuff that made you successful in the first place. What also tends to happen is that you'll put out your new album and then 6 months later your old label puts out your greatest hits.

What have been the mistakes that the industry made in the past?

Some of the mistakes of the past have been overstated. There has been a lot of criticism about labels not moving fast enough to licensed download services. It is slightly unfair because part of the problem was that that they didn't have the rights in place. Piracy got out of the bag at the same time. You could argue that the biggest mistake was the introduction of the CD format without robust rights protection mechanisms. I do think that allowing Apple to become virtually the single major download retailer was a mistake that they have learned from and they will make sure that choice remains in the streaming market. There are still things that they can learn from – the reluctance to explore different business models – one example would be that there are people who won't pay $9.99 a month for access to 40m tracks; but would they pay for access to a more limited, more curated service at a different price point? Will the labels be flexible enough to allow a service to introduce that?

An interview on US music regulation with…

Leslie Jose Zigel, Chair of Entertainment Practice, Greenspoon Marder

Leslie José Zigel is a shareholder and Chair of Greenspoon Marder's Entertainment Practice, focusing on both the creative and business sides of the entertainment industries in the music, TV, film and new technology sectors. Mr. Zigel is known for representing Pitbull and other Latin stars including Colombia's Carlos Vives and urban hitmaker Wisin.

Do you think there is potential for broader music regulatory reform globally, including intervention on radio's right to free plays in certain markets?

There is an opportunity, but it will depend on a lot of factors. I don't think anything will happen before the presidential election in the US. There are very strong lobbying and interest groups that will drive the legislative discussion. Take the example of US terrestrial radio that, unlike its European counterparts, has managed to avoid paying neighbouring rights royalties. In 1995 when the Copyright Act was amended, digital transmission neighbouring rights were introduced (and later further codified under the Digital Millennium Copyright Act when Sound Exchange was set up), and webcasting services like Internet radio stations (and more recently, Pandora), along with Sirius and XM satellite radio (the two later merged into what is now known as Sirius XM) became obligated to pay the US equivalent of neighbouring rights royalties. I do think there is potential for legislative action, but in what direction it will go is anybody's guess.

How does streaming change the way royalty rates are being set? How does that affect the various parties?

Economically, streaming pays a percentage of revenues versus a per unit royalty as is the case with physical and digital sales. I like to look at this revenue stream from a business perspective. It is easy to say that streaming services like Spotify pay very little per stream, but to be intellectually honest, one needs to look at the overall business model. Of the 100% revenue pie, Spotify keeps 30% and pays 70% to rights owners. Within that 70%, labels and publishers have to split the amount among them. Labels generally take a higher percentage of that pie than publishers, as is the case with physical and digital sales. This harkens back to the industry perspective that labels invest much more to sell the "single" than publishers so they are entitled to more. In terms of impact, there is a constant fight for publishers to receive more money and the labels want to maintain their larger share. It is a complex proposition. How we get there is a question for the future – one should take a step back and think about the right split and value proposition of each party. Having too many entrenched lobbyists doesn't help either.

What is the debate around the "safe harbour" rules?

The safe harbour provision says that the ISPs and platforms like YouTube are not responsible for vetting whether or not the users are putting copyright cleared content on their platforms. Their only obligation is to take down content if they receive a notice from the content owner that something on their site is a copyright violation. To give you an example, in 2007 Viacom sent a take-down notice to YouTube claiming that over 150,000 Viacom clips were illegally being hosted on YouTube. YouTube promptly took the clips down and claimed safe harbour protection. This still occurs today and the copyright owners have to notify YouTube each time they see a new clip of their content. It's like a game of Whack-a-mole where they take down one infringer only for 5 more to pop up. So content owners feel the safe harbour rules don't go far enough to impose an obligation on YouTube and others to vet the content uploaded to their sites. By contrast, on television, TV networks and show producers have to clear all musical content before it is aired – there is no safe harbour and as a result networks and producers are very vigilant about clearing music cues and rights owners make significant amounts in licensing fees as a result. To its credit, YouTube has a finger printing system that identifies music on user generated content and helps labels and publishers receive a share of the advertising on the videos that YouTube identifies on the YouTube platform. One effective change could be to enact a "take down and stay down" approach whereby the ISP could add the digital fingerprint of non-licensed content they are told to take down into a database which would then be used to prevent the same user (or another) from re-uploading the work to the service.

What could be done to improve music monetization?

My view is we should look at music as a utility. If you look at all the traffic on internet service providers (ISPs). – music drives a significant percentage of their traffic and thus their income. However, it is difficult to ascribe precisely how music fits into each user interaction on these sites. These sites work on subscription-based business models and collect advertising dollars based on eye balls and not a one-for-one commercial exchange of music to listener for a fee. If 40% of these sites' traffic is related to music in some tangential way, why not create a pool of a few percentage points of their gross revenues to be paid to the rights owners much like radio stations pay into BMI and ASCAP? Of course there will be a fight between labels and publishers as to how to carve up the pie, but this scenario would provide a much needed cash infusion to rights owners who help ultimately drive significant traffic (and value) to these sites.

What is your view on the global state of piracy regulation/ enforcement?

Global piracy regulation can be better. What will change piracy is the advent of services that pay artists. Take the example of Sweden that saw a dramatic decline in piracy in early 2000s with the launch of Spotify from 90% piracy to approximately 5% piracy today. I think people will ultimately pay if you give them a service where they can watch/listen to what they want, when they want, on a device/medium of their choosing at a reasonable price. If the service and the experience are good, people will pay. Government regulation can only go so far to combat piracy.

We've recently seen Pandora and Sirius settling with labels on pre-1972 recordings – do you see scope for these recordings to be included in federal copyright law?

These recordings should be part of what these services pay for in the future. The law says they don't have to, but players like Sirius or Pandora make revenues on those rights so it is only fair that they should pay for it. I think the law should change, but there are strong lobbyists against this proposition. From an artist's point of view, if they have enough leverage they can renegotiate. Otherwise, it doesn't really happen. As a general principal, if the copyright in the recordings is still valid, those recordings should receive the same protection as their brethren recorded post-1972.

What are the implications from a royalty's point of view of Pandora's recent move into paid streaming?

Pandora accounted for around 60% of Sound Exchange's total royalty collections of about $1bn in 2015 for what is known as non-interactive streaming. The change in Pandora's business model to now include interactive streaming (like Spotify and Apple Music where you can select the songs you want to hear on-demand) has a massive impact from an artist's perspective. Artists enjoy getting their money from SoundExchange rather than through a label. The fear is Pandora will now pay the labels directly (like Spotify and Apple Music) meaning artists will be subject to their record royalty of 15% that could be cross-collateralized against their royalty account instead of being paid 45% of each dollar of Pandora's overall recording-related royalties directly each month. As the new Pandora on-demand interactive streaming model siphons off users from its non-interactive streaming platform, SoundExchange royalties could go down significantly.

How do you think of exclusivity and windowing in terms of its impact on the industry as a whole?

I'm not in favor of exclusives. I believe ubiquity is best for an artist. Why would an artist want to alienate their fan base and not allow them to listen to their songs from week one? Artists should not be in the business of forcing consumers to adopt one platform or another.

To put this into perspective, this would be akin to artists saying you can only play your album on a Panasonic turntable instead of a Sony turntable so buy a Panasonic to listen to my music! This only benefits Panasonic, or in today's world Apple, Tidal or Spotify. I think the windowing will be good in the short term for the streaming services but bad ultimately for artists and worst of all for consumers.

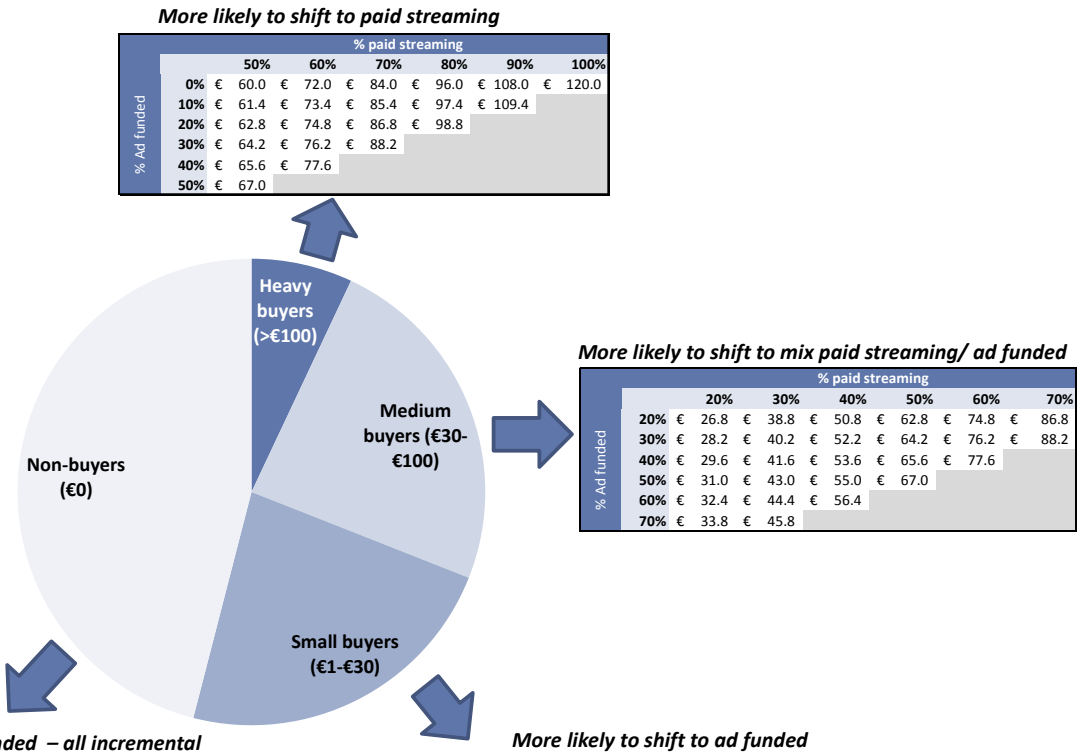
Streaming drives greater monetization for music owners

The music industry faces the paradox of an ever growing demand for music consumption and a low propensity to pay for it. Some 93% of the US population listens to music and spends more than 25 hours a week doing so according to Nielsen. Yet, less than half of the population in developed markets pays for music – YouTube even estimates only 20% of the global population has been a buyer of music. Moreover, the average spend per person on recorded music is only around $15 in developed markets and $1 in EM in 2015, based on IFPI data. This compares to an average spend per person on entertainment of around $1,095 in developed markets based on Euromonitor data.

The monetization potential for the music industry is therefore huge we believe, but much of this potential is still being hindered by piracy and cultural factors. How and why could consumer propensity to pay for music change?

We see two distinct types of consumers and ways to address them: a) paid streaming addresses the portion of consumers who are willing to pay for better access and convenience, and b) ad-funded streaming helps address those who are not willing to pay (partly because of piracy) or cannot afford it by shifting illegal streaming to legal, better quality, more convenient streaming services which are equally free for the user. This could have significant implications in EM where up to 90% of music content is pirated according to IIPA (International Intellectual Property Alliance).

Exhibit 37: The shift to legal streaming has the potential to improve monetization for all types of music users
Breakdown of average spend and type of users based on French data – four scenarios



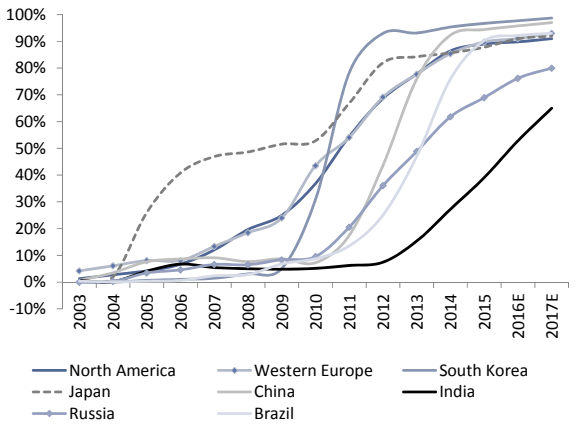
Source: SNEP, Goldman Sachs Global Investment Research.

1. Greater consumer willingness to pay for convenience and access

Streaming has totally revolutionized the way people listen to music, offering seamless access to a near-infinite library of songs (compare Walmart's estimated 21,000 tracks on shelves to Spotify's 30 mn), anywhere and anytime, and enabling greater personalization through curated playlists and more interactivity. This has led to a strong surge in consumption of online music and, in particular, on mobile devices. The US population alone consumed c.114 bn audio streams during 1H16, representing a 97% yoy jump according to Nielsen, which implies around 630 mn streams per day. This trend is likely to grow from here, driven by:

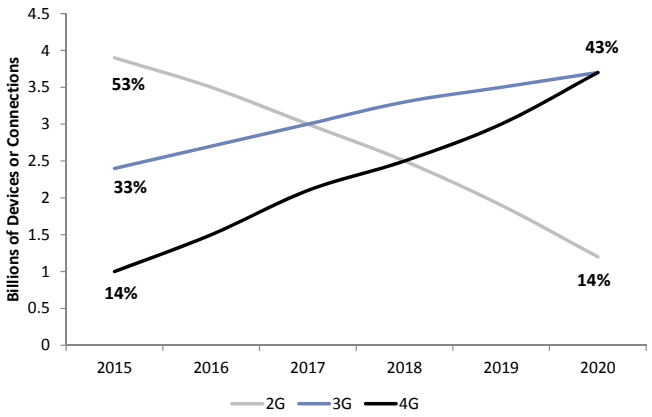
- Further improvement of fixed and mobile broadband infrastructure, especially roll out of 4G (and later 5G) enabling 6x more data consumption as compared to non 4G connection.
- The proliferation of connected devices, especially smartphones, and the growing share of time spent on mobile devices. A March 2016 study from Parks Associates found that 68% of smartphone owners listen to streaming music at least once a day in the US and that average time spent is 45 minutes.
- The proliferation of streaming services – IFPI counted c.400 platforms globally and 57 interactive streaming services in the US alone.

Exhibit 38: Smartphone penetration continues to rise
Smartphone subscribers, % of total handsets



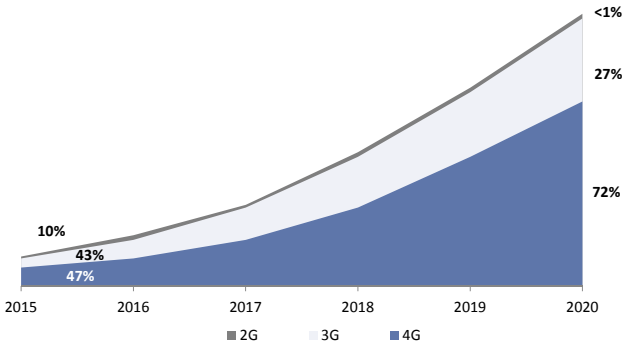
Source: Gartner, Goldman Sachs Global Investment Research.

Exhibit 39: 4G is expected to reach 43% device share by 2020…
Global mobile devices by 2G, 3G, 4G



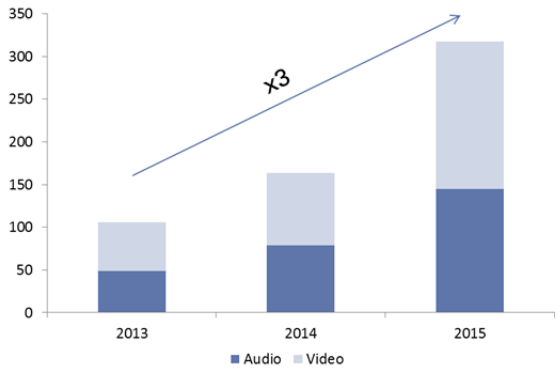
Source: Cisco VNI Mobile.

Exhibit 40: …driving 6x more traffic than a non-4G connection
Global mobile traffic by connection type



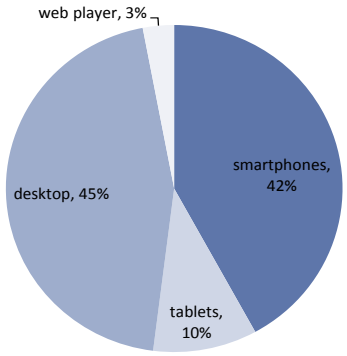
Source: Cisco VNI Mobile.

Exhibit 41: US on-demand music streams have risen 3x over the last two years
US audio and video streams (bn)



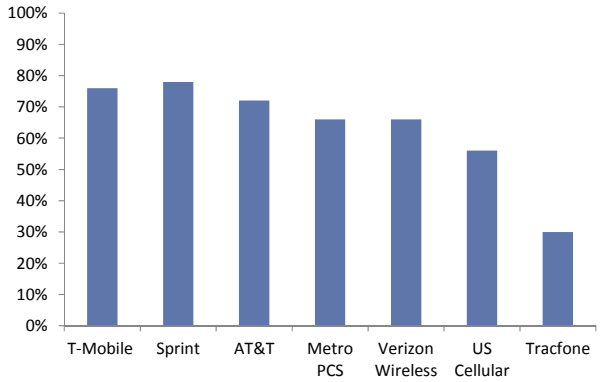
Source: Cisco VNI Mobile.

Exhibit 42: Over 50% of music consumption on Spotify now on smartphones and tablets
Share of Spotify listening by device type (2014)



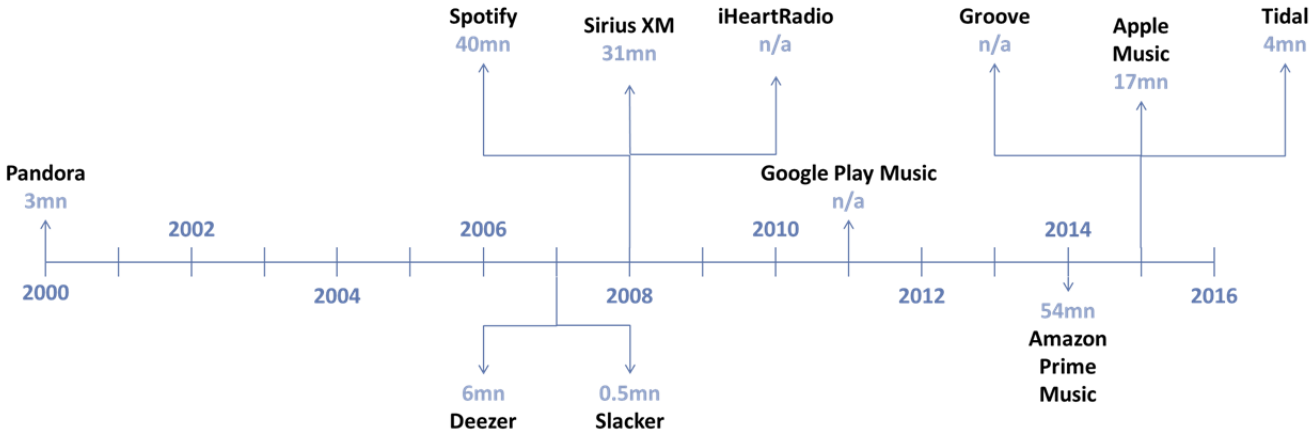
Source: Activate.

Exhibit 43: Proportion of consumers who listen to streaming music on a smartphone at least once per day
US broadband households with mobile phone service from specified providers (2016)



Source: Parks Associates.

Exhibit 44: There has been a proliferation of streaming music platforms over the last 10 years
Using the latest number of paying subscribers available

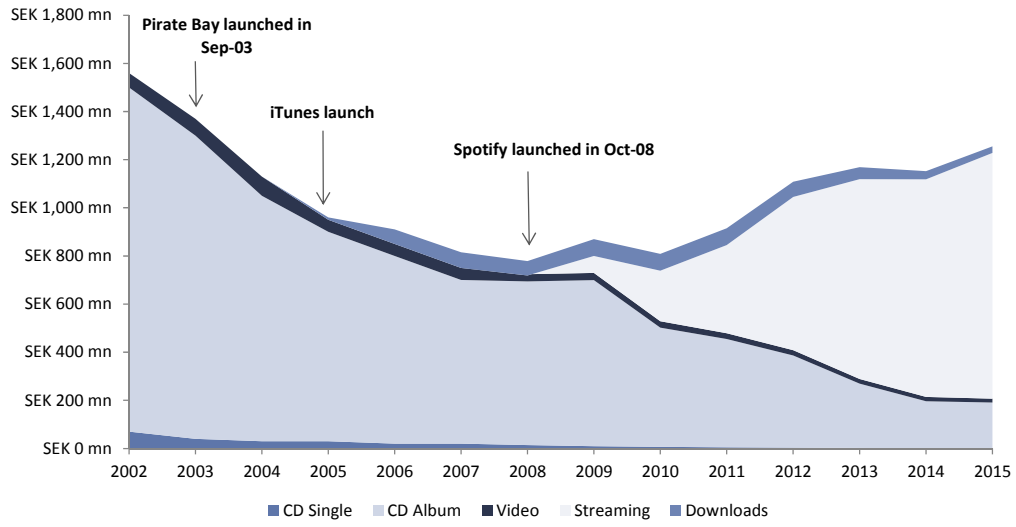


Source: Press reports, Goldman Sachs Global Investment Research.

This surge in consumption, combined with better convenience and accessibility, should make consumers more willing to pay for music streaming in our view. While the Swedish context is rather specific, as Spotify benefitted from a combination of favourable factors such as good broadband infrastructure, tech-savvy population and stringent laws against piracy, it still shows that the introduction of paid streaming services has helped drive a significant recovery for the industry back to its 2004 highs. We have also seen examples of customer propensity to pay more in other fields such as TV content as a result of increased convenience and enhanced quality (HD, Personal Video Recorders or Online streaming services in addition to traditional TV packages).

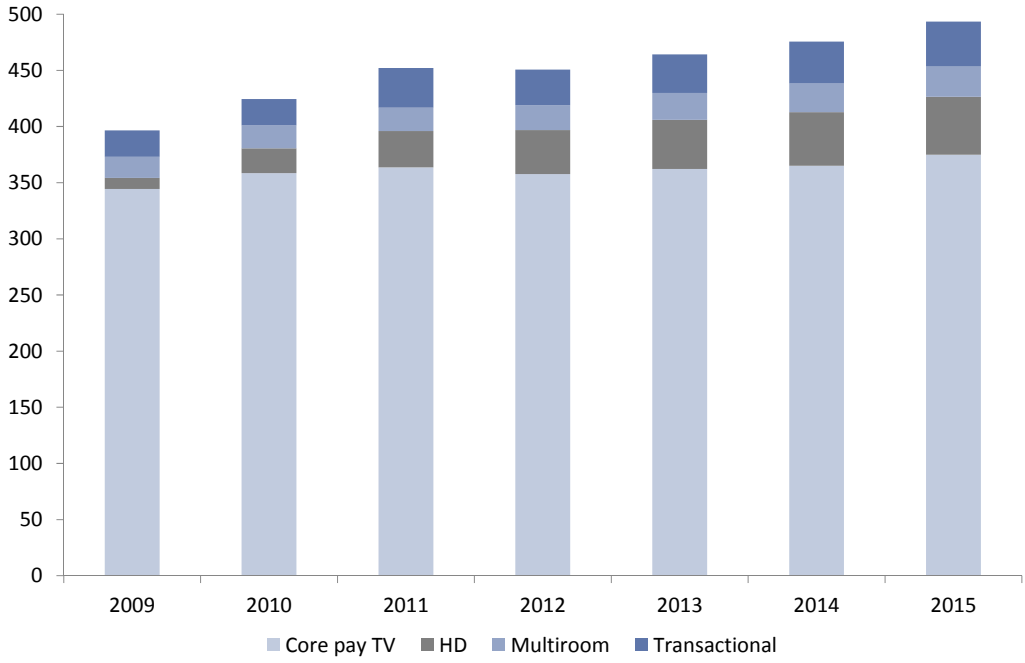
According to a survey from BPI, the main reasons for paying are the removal of adverts, and the on-demand and the on-the-go functionality.

Exhibit 45: Streaming helped the Swedish recorded market recover in seven years the value it had lost in five years
Sweden music sales revenues (Skr mn)



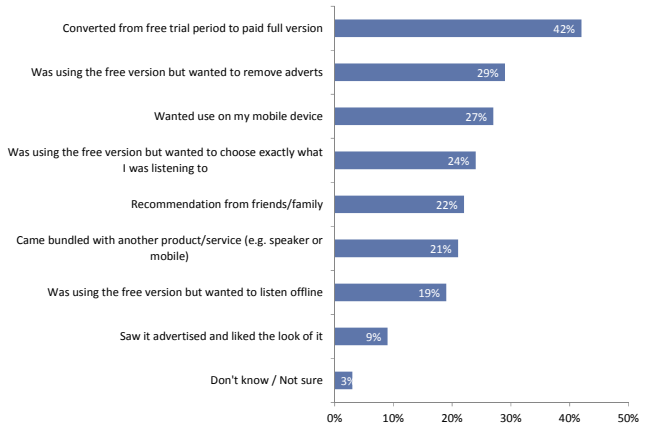
Source: IFPI.

Exhibit 46: Sky customers have been paying more for add-on products and services
Estimated Sky UK Pay TV ARPU breakdown



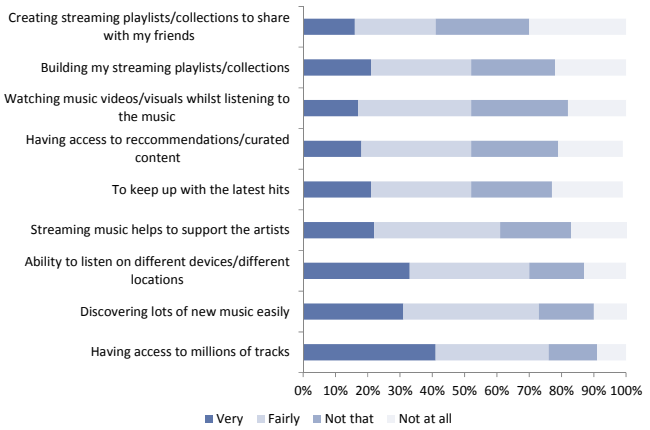
Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 47: Users are willing to pay for greater convenience and accessibility
Reasons for Paying for Music Streaming



Source: BPI.

Exhibit 48: Streaming users value the vast library, discoverability and seamless experience the most
How important are the following to you?



Source: BPI.

A lot of questions have been raised about the propensity of consumers to move to a 120 per annum price point (local currency) subscription, given the annual average spend of a music buyer is on average €36.8 in France and £52.42 in the UK, with a wide dispersion of spend per person. In France, 7% of the overall population spends more than €100, 24% spends €30-€100 and 23% less than €30, with 46% not paying anything. In the UK, we calculate that 8% of the population spends £170, 8% spends £49, and 24% spends between £4 and £25 on average, with 60% of the population not spending anything. We see opportunities to address these different needs and budgets through more segmented offerings and price points.

- The full, "all you can eat" on-demand service typically has a monthly 9.99 price point (in local currency) in DM. We believe this will be appealing for the c.10% of the population who are already heavy buyers (>€120 in France, £170 in the UK), but also to a portion of the 15%-20% of medium buyers who spend on average €30-100 in France and £25-49 in the UK.
- For the light to medium buyers, we believe lower price points could be attractive including telecom bundles, student plans (50% discount to standard price) and also family plans (Apple Music has a $14.99 plan which can be shared by up to six family members). We believe more price points will be introduced with varying degrees of functionality and content availability in the future to better segment customers. Amazon is reportedly planning to launch a $4-5 monthly on-demand service that would be streamed solely on Echo, its voice-controlled speaker and digital assistant. Pandora is also reportedly introducing multiple price tiers for its new on demand service, including one at $5 which allows users to soft-download a limited number of tracks.
- In Emerging Markets, most "all you can eat" services have a price point of c.$4 for the likes of Apple Music or Spotify.

2. Ad-funded streaming helps address users who do not want or cannot afford to pay for music

We believe people currently not paying anything for music (including many piracy users) could be attracted to streaming services via: 1) free, ad-funded tiers (which have lower functionality than the paid tier), 2) free trials (e.g., Apple Music's 3-month free trial), and 3) subsidies (student plans, telecom bundles or family plans). We believe these are powerful marketing tactics that would give the opportunity to discover the service, appreciate the

convenience and curation capabilities and ultimately hook the consumer and drive conversion to paid streaming. Recent data have been encouraging in this regard, with Spotify's proportion of paid users rising from 7% in 2010 to c.25%-30% in 2012-15 and more recently to 33% following the introduction of a $0.99 promotion for three months subscription in several territories. We examine in a later section how streaming could have an even bigger impact in emerging markets where piracy usage is as high as 90%.

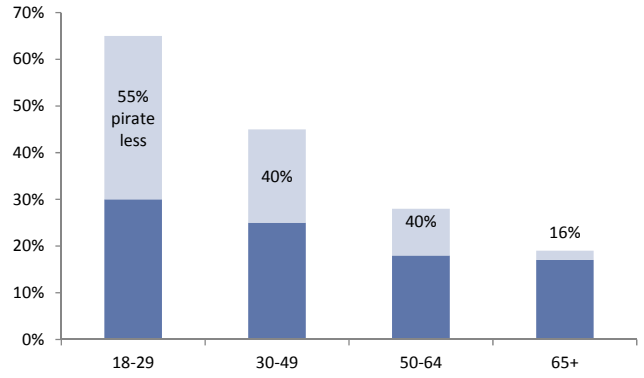
Streaming has proven to reduce illegal downloads…

Piracy has long been one of the major challenges in the music industry either in its digital or physical form, and the principal driver of the collapse of the recording music industry in the 2000s. IFPI estimates that there were tens of billions of files downloaded illegally in 2014. The Social Science Research Council estimates that piracy costs the US music industry alone $12 bn compared to the actual $7 bn US retail recorded music market (RIAA).

A number of actions have been taken in the last decade either technological (e.g. automating large-scale takedowns of infringing links and mobile applications), educational (e.g. adverts) or legal (lawsuits, anti-piracy legislation). While these efforts will continue to be important, we believe the proliferation of online streaming services could be a more potent incentive to curb piracy. Multiple studies have demonstrated the positive impact of legal streaming:

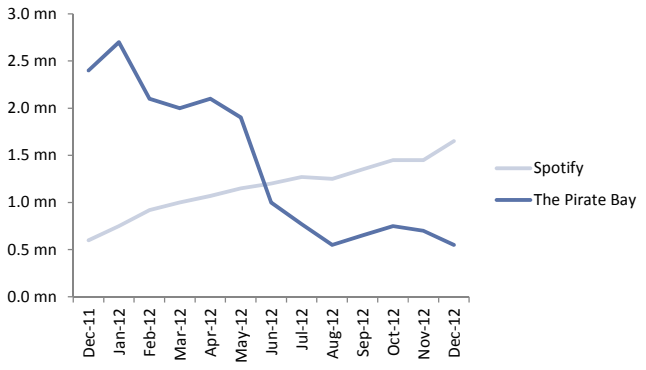
- The proportion of internet users worldwide regularly accessing unlicensed services on desktop-based devices went down to 20% in 2015 from 30% in 2012 (IFPI/ComScore/Nielsen).
- An IPSOS MMI report found that the number of illegally copied songs in Norway plummeted to 210 mn in 2012 from 1.2 bn in 2008 (the year of Spotify's launch in the country), while in the meantime legal streaming penetration increased to 10.3% in 2012 from 4.5% in 2011.
- A study from the European Commission in 2015 revealed that the number of illegal downloads decreases by one for every 47 Spotify streams.
- A Spotify study showed that overall music piracy volume fell by over 20% between December 2012 and December 2013, with casual pirates being converted to legal services but hard core pirates persisting.

Exhibit 49: 55% of 18-29 year olds in Spotify's markets are pirating less now that they have a free alternative
Respondents choosing "pirate less" when given a free and legal alternative



Source: Columbia University 'Copyright Infringement and Enforcement in the US'.

Exhibit 50: Spotify's growth has coincided with declines in peer-to-peer download sites following recent tougher regulation
Online use of Spotify vs. The Pirate Bay in the Netherlands



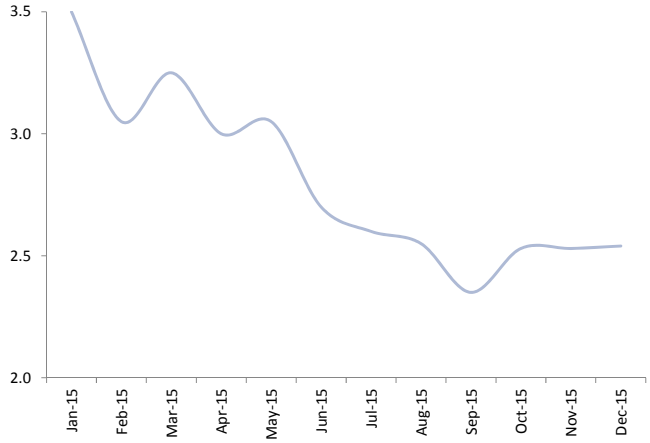
Source: ComScore.

… but many challenges remain, putting YouTube at the center of the debate

With YouTube being the most accessed platform for free online and mobile music consumption, there has unsurprisingly been a growing debate and scrutiny over YouTube's role in fighting piracy. An IPSOS survey in 13 key markets revealed that 82% of YouTube's 1.3 bn users listen to music, and that 57% of internet users have accessed music through video sites such as YouTube in the past six months, compared to 38% for streaming services such as Spotify and 26% for digital stores such as iTunes.

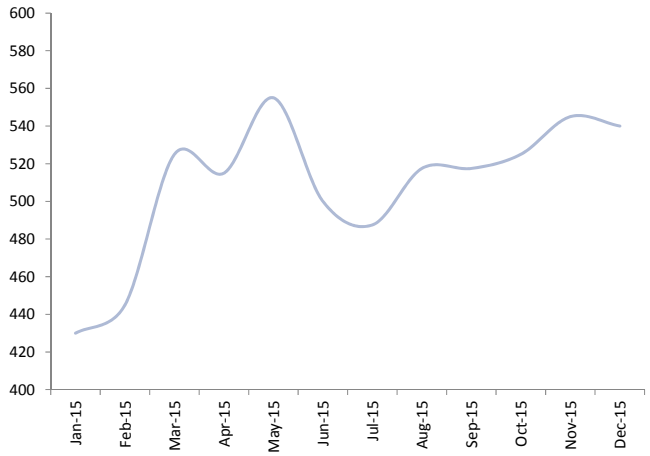
- **YouTube-based stream ripping the new form of music piracy replacing torrent sites**. Stream-ripping essentially means illegally converting legal streams into downloads through ripper sites. IFPI reckons stream-ripping has become the most popular form of piracy, with almost half of 16-24 year olds engaging in such activities. Anti-piracy tech company Muso also found that stream-ripping makes up 18% of all visits to piracy sites for music content and that torrent sites have been partly displaced by YouTube ripper sites. We believe this will remain a challenge for the future monetization of music.

Exhibit 51: There are fewer people using torrent sites…
Global monthly visits to public torrent sites (bn)



Source: Muso.

Exhibit 52: …as more people are directly downloading music videos from YouTube
Global monthly visits to YouTube ripper sites (mn)



Source: Muso.

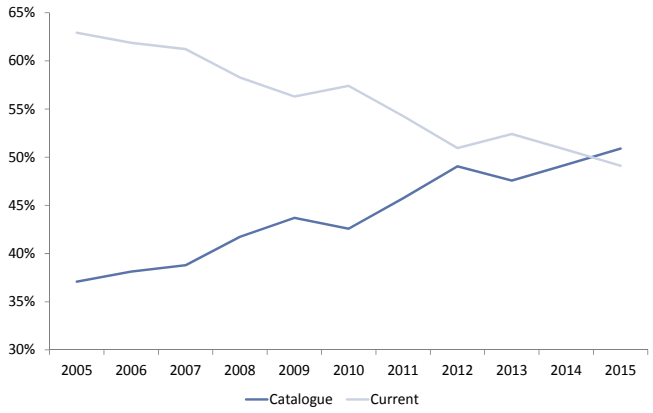
- **The debate about efficiency of YouTube's Content ID.** As a passive and neutral hosting service under EU and US copyright laws, YouTube is not liable for copyright infringement taking place on its platform. It is up to the rights holders to submit takedown notice claims and manage their content through Content ID, a copyright-management system that allows them to track and then choose to block or monetise user-generated content that uses their IP. This creates a disconnect between the amount of copyrighted content being consumed and its monetization (see section *Regulation sets the stage*). Music rights holders argue that Content ID is not efficient enough in preventing copyright infringement and fails to identify 20%-40% of their recordings (IFPI). YouTube responded that it solves 98% of copyright issues and that music rights holders choose to monetise more than 95% of their Content ID claims rather than get the videos removed from YouTube.

3. Streaming increases the value of catalogues

Streaming improves discoverability and monetization of back catalogues, thus turning a one-off transaction into an annuity of cash flows. Catalogue songs (i.e., older than 18 months) accounted for 70% of all streaming volume in 2015, compared to 50% of overall physical and digital album sales (Nielsen). This comes at a time when physical sales of

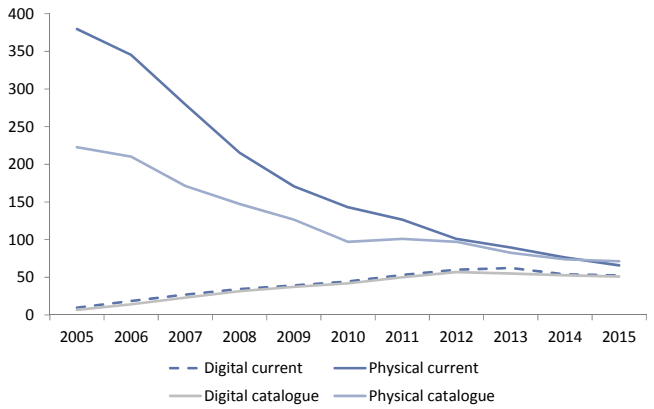
current albums have come under significant pressure, which led the overall share of current album sales (physical + downloads) to decrease from 63% in 2005 to less than 50% today (Nielsen). Warner Music in its 2015 10K report said that it sees greater monetization of its catalogue songs in streaming and higher margins (given lower marketing cost).

Exhibit 53: Catalogue sales now account for over half of total sales from 37% in 2005…
Share of current album sales physical vs. digital in the US, 2005-2015



Source: Nielsen, Goldman Sachs Global Investment Research.

Exhibit 54: … although this was mainly driven by the fall in physical current sales
Current vs. catalogue album sales, physical vs. digital in the US, 2005-2015 (mn)



Source: Nielsen, Goldman Sachs Global Investment Research.

Streaming benefits from a growing and captive audience

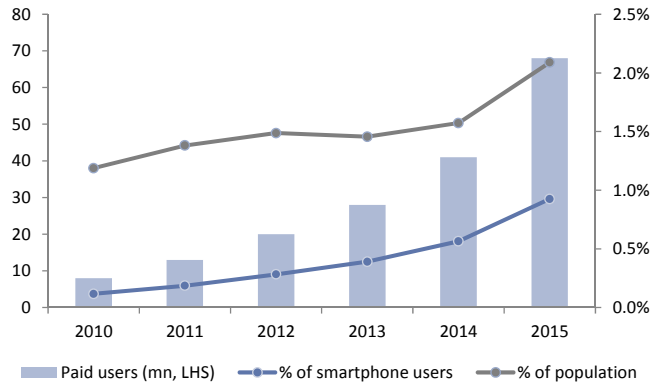
1. Growing penetration of paid subscription services led by DMs

With 90% of the recorded music revenue globally being concentrated in DMs, and an average ARPU of $120 in subscription streaming compared to around $50 for the average music buyer, the future take-up of paid streaming services in those markets will be a key driver of the overall recovery of the music industry. We see plenty of room to improve the penetration rate (currently at 3% on average) in DMs and catch up with the most advanced markets (the Nordics) which are already over 20%.

Paid streaming penetration growth has been accelerating

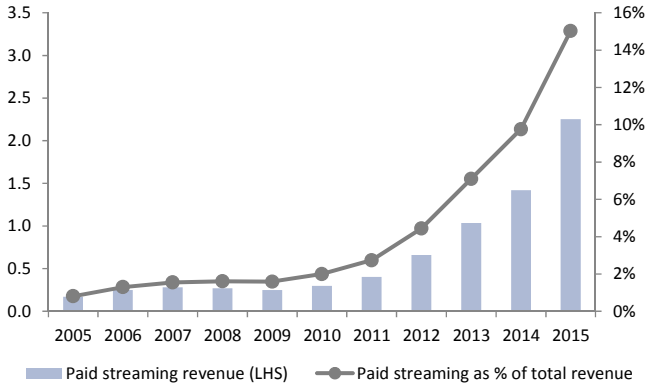
Streaming services have been available over the past 10 years, but we have observed a material acceleration in adoption over the past four years. The number of paying users grew to 68 mn in 2015 from 8 mn in 2010 (virtually all in DMs), driving a revenue increase to $2.3 bn in 2015 (15% of recorded music revenue) from $0.3 bn in 2010 based on IFPI data. We still see plenty of room for growth, with total population penetration only at 0.9% in 2015 or 2% of smartphone users.

Exhibit 55: The number of paying users increased to 68 mn in 2015 (2% of smartphone users) from 8 mn in 2010
Paid interactive streaming users (mn) worldwide and penetration of smartphone/ total population



Source: IFPI, Goldman Sachs Global Investment Research.

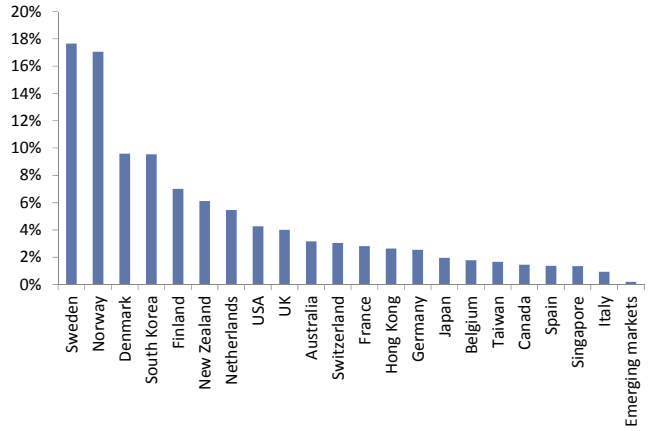
Exhibit 56: Paid streaming now accounts for 15% of total music revenue
Paid streaming revenue ($ bn, LHS) vs. % share of recorded music revenues (RHS)



Source: IFPI.

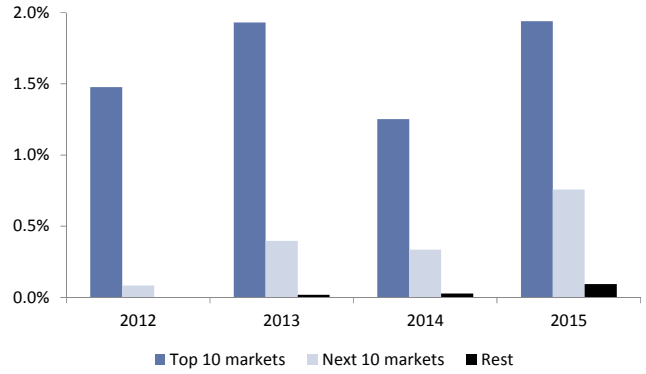
We calculate that the top 10 streaming markets were already at 8% of the population in 2015, with Sweden and Norway the most advanced markets at over 20% in 2015 (Deezer reckons that Sweden was close to 30% as of September 2016). The next 10 markets were still at 2% and the rest of the world only 0.2%. Encouragingly, penetration growth has been accelerating, up 36 bp globally in 2015 vs. +16 bp pa over 2011-14. This was also the case in the 10 most advanced markets, up 190 bp in 2015 vs. 160 bp pa over 2011-14. The next 10 markets grew 80 bp in 2015 vs. 30 bp and the rest of the world 10 bp vs. 2 bp.

Exhibit 57: A wide disparity of paid streaming adoption
Paid streaming penetration, 2015



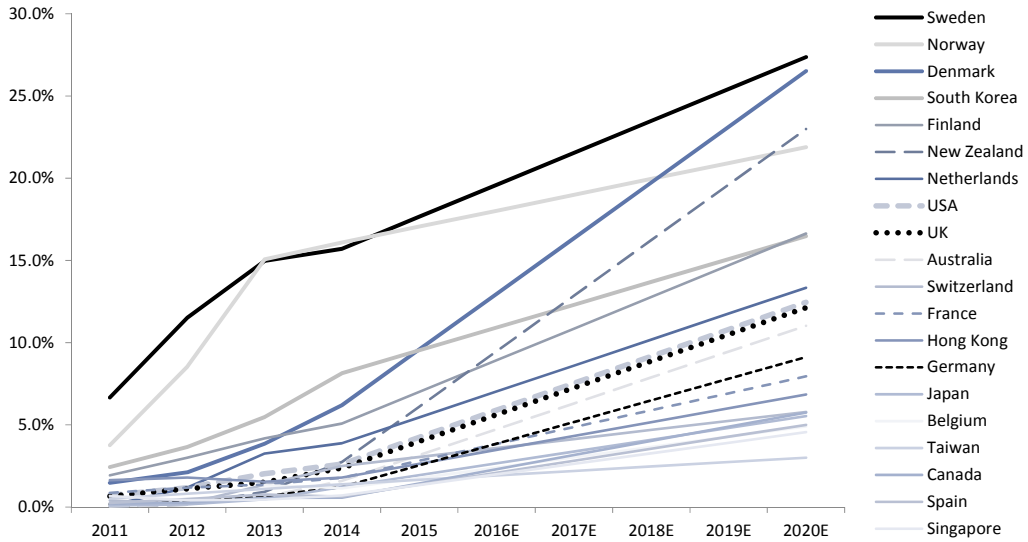
Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 58: Growth in penetration has been accelerating
Paid streaming penetration growth (absolute)



Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 59: Extrapolating 2015 penetration growth rates would result in 18% penetration on average in the top 10 markets vs. 8% today, 6% in the next 10 vs. 2% today
Top 20 markets in terms of subscription streaming penetration



Source: IFPI, Goldman Sachs Global Investment Research.

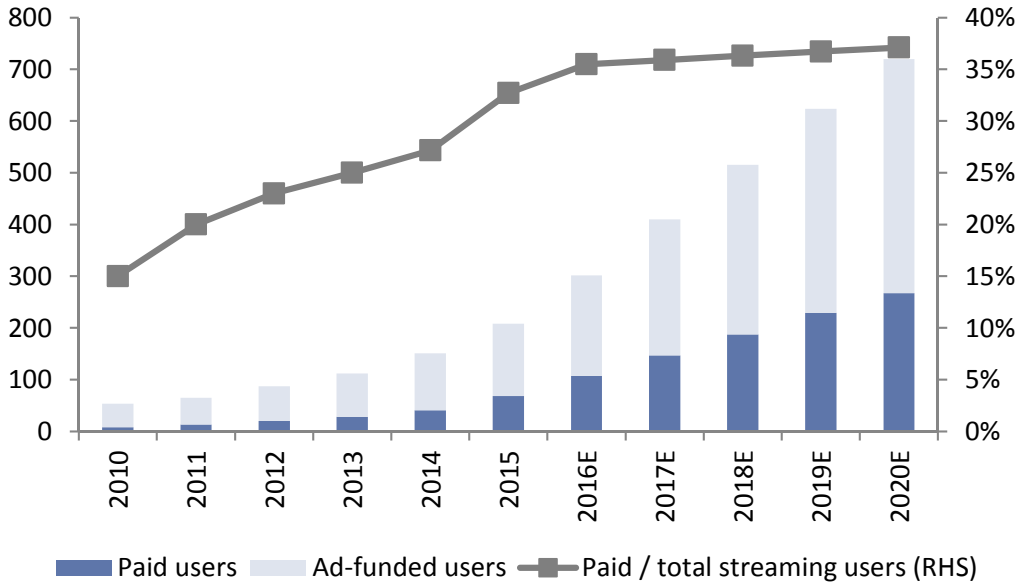
Improving free-to-paid conversion rates

Underpinning this is the improved free-to-paid conversion rates seen across the industry in the past few years, with the ratio of paid users vs. total users rising from 15% in 2010 to 33% in 2015, based on IFPI data and our estimates. For instance, the proportion of paid users at Spotify increased from 7% in 2010 to 28% at the end of 2015 and 33% as of August 2016 following the introduction of a $0.99 promotion for three months in several territories. Although not a direct comparison, Apple reported that its streaming service had 15 mn users of which 6.5 mn were paying and the remainder on the free trial as of October 2015, implying a conversion rate of 43%. Since then, Apple has not given any split, but commented that it has not changed much. Eddie Cue: "We're not giving out any numbers, but we've been very happy with the results we've seen. And it's stayed very consistent - it hasn't really changed at all, which I thought was interesting." (Billboard, June 15, 2016).

We expect that ratio to continue to rise and reach 37% by 2020 as consumers increasingly value the convenience of the service and streaming players focus more on the paid model (note all recent launches have been paid only such as Apple Music, Deezer in the US, YouTube Red, with Amazon, Pandora and iHeartRadio also entering the space).

Exhibit 60: The proportion of paid as % of total streaming users increased to 33% in 2015 from 15% in 2010 across all services

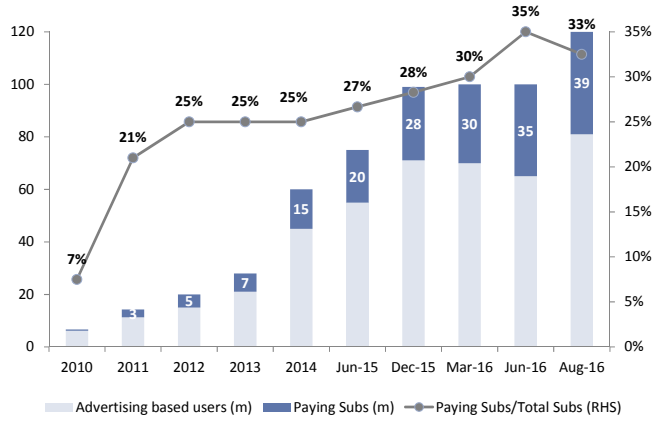
Total streaming users: paid vs. ad supported (mn, LHS)



Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 61: Conversion rates have improved for Spotify

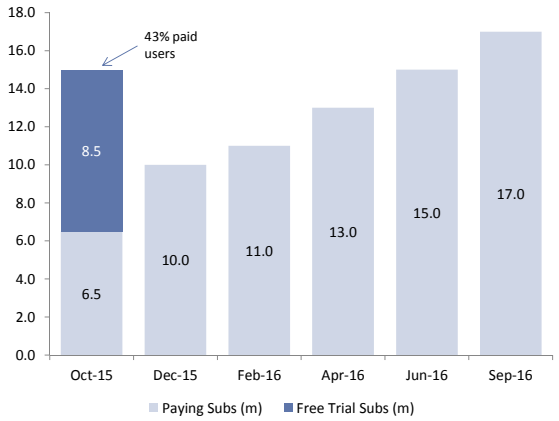
Spotify total subscribers: ad-based and paying (mn, LHS) vs. paying subs as % of total subscribers (%, RHS)



Source: Spotify, Press reports.

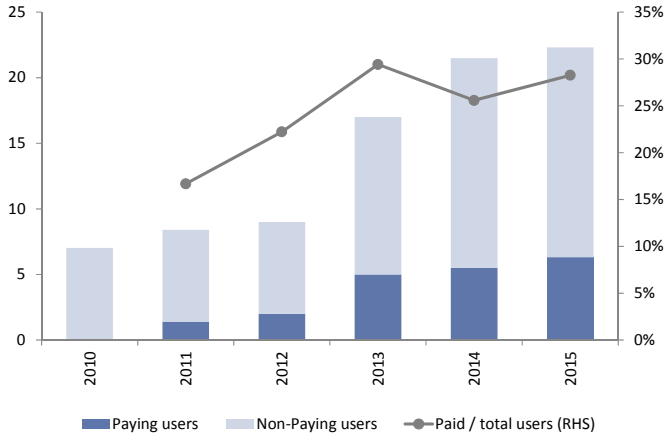
Exhibit 62: 43% of Apple Music users were paying as of October 2015

Apple Music total subscribers: free trial and paying (mn)



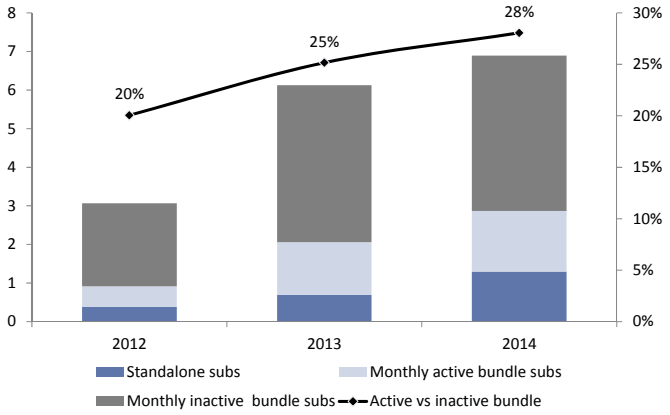
Source: Apple, Press reports.

Exhibit 63: Deezer's paid penetration has been more or less stable since 2013
Deezer users (mn, LHS) and ratio of paying users as % of total users (%, RHS)



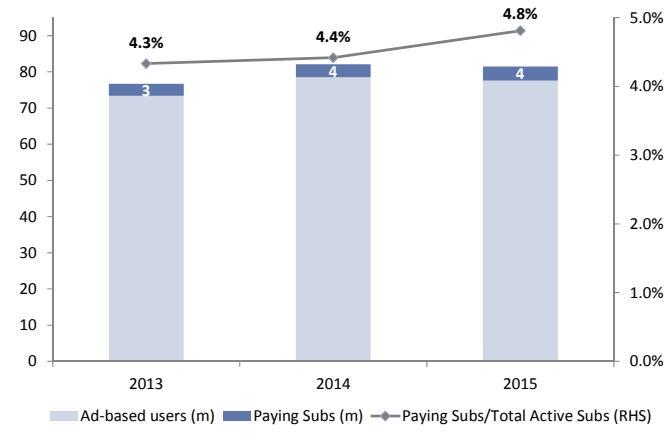
Source: Deezer, Press reports, Goldman Sachs Global Investment Research.

Exhibit 64: The proportion of active vs. inactive mobile phone bundle subscribers increased over 2012-14 to 28% for Deezer
Deezer subscribers (mn, LHS) and active bundle subscribers as % of total subscribers (%, RHS)



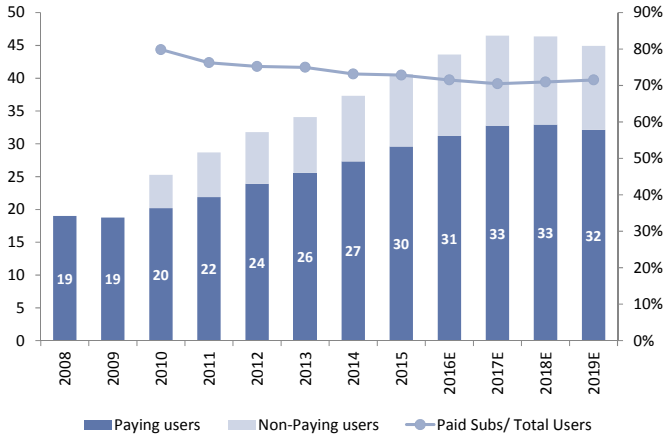
Source: Deezer, Press reports, Goldman Sachs Global Investment Research.

Exhibit 65: Pandora's paid penetration has increased slightly but remains heavily reliant on advertising
Pandora users (mn, LHS) and ratio of paying subscribers as % of total active subscribers (%, RHS)



Source: Company data.

Exhibit 66: Sirius' paid penetration has decreased slightly but remains heavily reliant on paid users
Sirius XM users (mn, LHS) and ratio of paying users as % of total users (%, RHS)



Source: Apple, Press reports.

Our base case is 9% penetration of smartphone population globally by 2030
We forecast that total paid streaming penetration will reach 9% of the total smartphone population globally by 2030 from 2% in 2015, by extrapolating 2015 growth trends. This level will still be below the average penetration for the top five paid streaming markets of 11% in 2015 and less than half the penetration in Sweden and Norway (over 20%), the most advanced markets. We assume that ARPU stays flat as the growth of lower ARPU streaming services in EM ($4 monthly average price currently) will likely offset the improving mix towards higher ARPU services in DM and the underlying inflation. This brings the total paid streaming market alone to $23 bn in 2030 from $2.3 bn in 2015, well above the total recorded music market of $15 bn in 2015.

Our sensitivity analysis shows that any 1% of additional penetration would lift the overall market by c.$2.5 bn and any 1% change to ARPU would have a $3 bn impact.

Exhibit 67: Paid streaming market forecasts

	2010	2011	2012	2013	2014	2015	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Paid and freemium streaming revenue ($bn)	**0.3**	**0.4**	**0.7**	**1.0**	**1.4**	**2.3**	**3.6**	**5.1**	**6.6**	**8.1**	**9.5**	**10.9**	**12.2**	**13.6**	**14.9**	**16.3**	**17.6**	**18.9**	**20.3**	**21.6**	**22.9**
% growth		36%	63%	57%	37%	59%	61%	40%	30%	23%	17%	15%	12%	11%	10%	9%	8%	8%	7%	7%	6%
% of total recorded music	2%	3%	4%	7%	10%	15%	23%	31%	38%	43%	48%	51%	54%	56%	58%	60%	61%	63%	63%	64%	65%
Paid users (m)	**8**	**13**	**20**	**28**	**41**	**68**	**107**	**147**	**187**	**230**	**270**	**310**	**348**	**386**	**424**	**462**	**500**	**538**	**576**	**614**	**652**
% growth		63%	54%	40%	46%	66%	57%	37%	27%	23%	17%	15%	12%	11%	10%	9%	8%	8%	7%	7%	6%
% of smartphone users	1.2%	1.4%	1.5%	1.5%	1.6%	2.1%	2.9%	3.6%	4.1%	4.6%	4.9%	5.1%	5.7%	6.2%	6.6%	7.1%	7.5%	7.9%	8.3%	8.7%	9.1%
% of total streaming users ex YouTube	15.0%	20.0%	23.0%	25.0%	27.2%	32.7%	35.5%	35.9%	36.3%	36.7%	37.1%	37.5%	37.9%	38.3%	38.7%	39.0%	39.4%	39.8%	40.1%	40.5%	40.8%
% of total population	0.1%	0.2%	0.3%	0.4%	0.6%	0.9%	1.4%	2.0%	2.5%	3.0%	3.5%	4.0%	4.4%	4.8%	5.3%	5.7%	6.1%	6.5%	6.9%	7.3%	7.7%
Average revenue per paying subs	**37.2**	**31.1**	**33.0**	**37.0**	**34.6**	**33.1**	**33.8**	**34.5**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**	**35.2**
% growth		-17%	6%	12%	-6%	-4%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Apple Music						**10**	**24**	**38**	**52**	**66**	**78**	**90**	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**
Net adds						10	14	14	14	14	12	12	10	10	10	10	10	10	10	10	10
Share of net adds						37%	36%	35%	35%	33%	30%	30%	26%	26%	26%	26%	26%	26%	26%	26%	26%
Penetration of iPhones						2.0%	3.9%	5.3%	6.6%	7.6%	8.3%	8.9%	9.8%	10.6%	11.5%	12.3%	13.1%	13.9%	14.7%	15.5%	16.2%
Global internet players (AMZ, FB, GGL)							**2**	**8**	**16**	**28**	**40**	**52**	**64**	**76**	**90**	**104**	**118**	**132**	**146**	**160**	**174**
Net adds							2	6	8	12	12	12	12	12	14	14	14	14	14	14	14
Share of net adds							5%	15%	20%	28%	30%	30%	32%	32%	37%	37%	37%	37%	37%	37%	37%
Pure streaming players	**8**	**13**	**20**	**28**	**41**	**58**	**81**	**101**	**119**	**136**	**152**	**168**	**184**	**200**	**214**	**228**	**242**	**256**	**270**	**284**	**298**
Net adds			7	8	13	17	23	20	18	17	16	16	16	16	14	14	14	14	14	14	14
Share of net adds						63%	59%	50%	45%	40%	40%	40%	42%	42%	37%	37%	37%	37%	37%	37%	37%

Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 68: Our base case is 9% total paid streaming penetration by 2030 with a flat ARPU

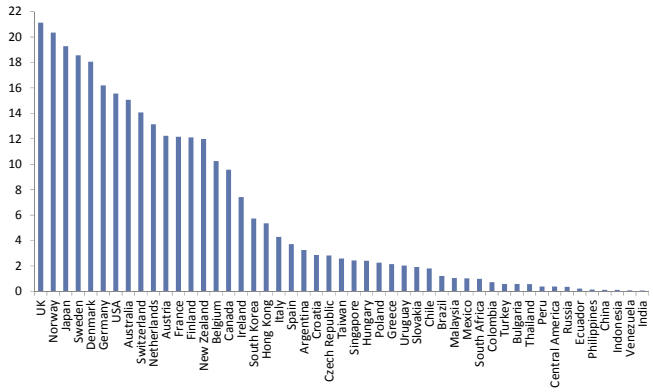
	PAID STREAMING PENETRATION 2030								
ARPU CAGR 2020-30	3.0%	5.0%	7.0%	9.0%	11.0%	13.0%	15.0%	17.0%	19.0%
-2.0%	6.0	10.0	13.9	17.9	21.9	25.9	29.9	33.8	37.8
-1.5%	6.3	10.6	14.8	19.0	23.3	27.5	31.7	36.0	40.2
-1.0%	6.7	11.2	15.7	20.2	24.7	29.2	33.7	38.2	42.7
-0.5%	7.2	11.9	16.7	21.5	26.3	31.1	35.8	40.6	45.4
0.0%	7.6	12.7	17.8	22.8	27.9	33.0	38.1	43.1	48.2
0.5%	8.1	13.5	18.9	24.2	29.6	35.0	40.4	45.8	51.2
1.0%	8.6	14.3	20.0	25.7	31.4	37.2	42.9	48.6	54.3
1.5%	9.1	15.2	21.2	27.3	33.4	39.4	45.5	51.6	57.6
2.0%	9.7	16.1	22.5	29.0	35.4	41.8	48.3	54.7	61.1

Source: Goldman Sachs Global Investment Research.

2. The emerging market opportunity

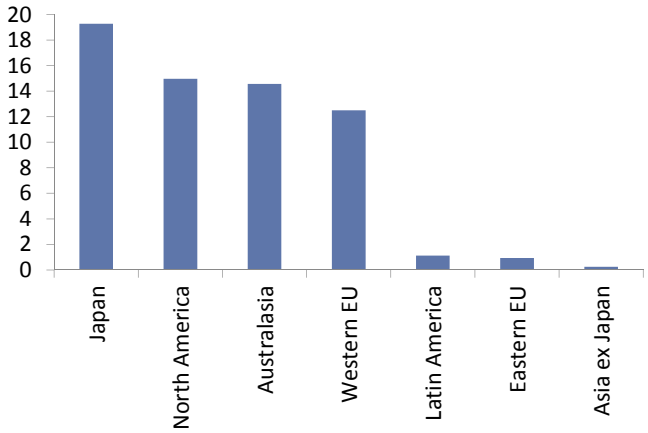
We believe emerging economies represent one of the biggest opportunities for the streaming industry, driven by a growing recognition of the value of IP, new business models (ad-funded, prepaid, telecom bundles etc.) and payment capabilities, while smartphone penetration is already at levels close to DMs. Average annual spend on recorded music per capita in EM stood at less than $1 in 2015 compared to around $15 in DM (IFPI). EM accounted for just c.10% of the global recorded music market in 2015. The entire Chinese music market was smaller than that of Sweden (while nominal GDP is 22x bigger) and the Indian market was smaller than that of Norway (while nominal GDP is 5x). This under-representation is mainly the result of widespread counterfeiting and piracy and under-developed physical retail infrastructure. The International Intellectual Property Alliance (IIPA) estimates music piracy rates are in excess of 90% in China, India, Mexico and Brazil.

Exhibit 69: Music spend per capita shows a clear divide between DM and EM
Music spend per capita ($, 2015)



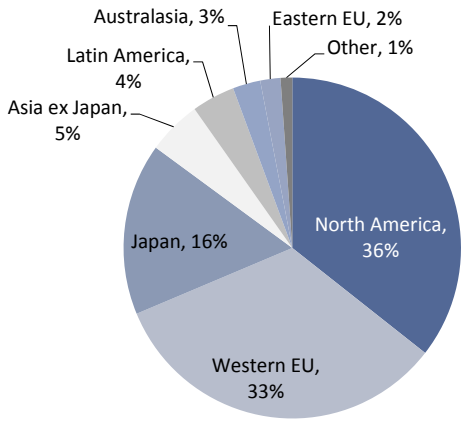
Source: IFPI.

Exhibit 70: Music spend per capita is around $1 in EM vs. $15 in DM
Music spend per capita ($, 2015)



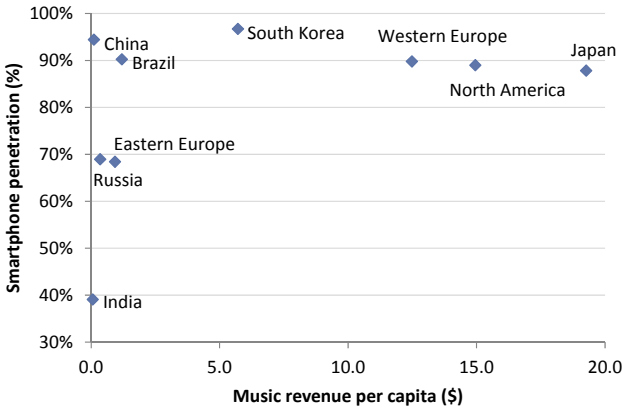
Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 71: EMs accounted for just 10% of the global recorded music market in 2015
Music revenues – market share by geography



Source: IFPI, Goldman Sachs Global Investment Research.

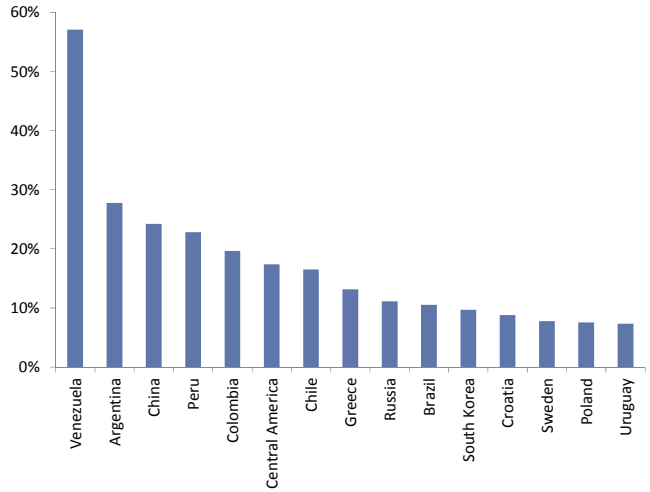
Exhibit 72: BRICs show significant revenue growth potential with smartphone penetration close to DMs
Music spend per capita ($) vs. smartphone penetration



Source: IFPI, Goldman Sachs Global Investment Research.

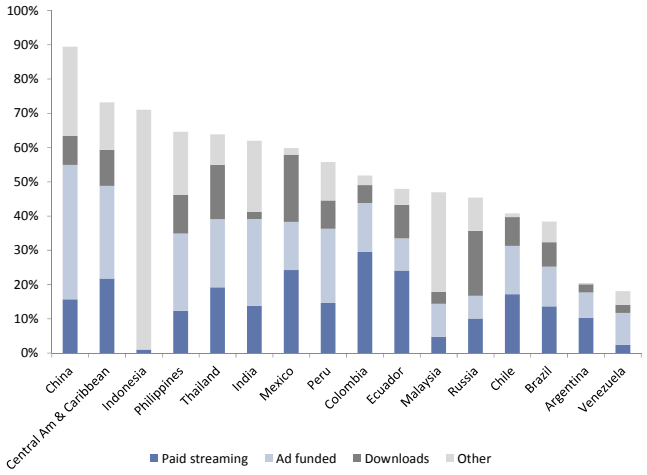
We believe the launch of convenient, better quality, legal streaming alternatives with a free tier could reduce piracy rates and therefore generate new revenue streams for the music industry. This transition should also be supported by the high level of digital penetration already present in many EM music markets and a growing recognition of the value of IP. Many emerging markets, which historically have not been big spenders on music, have seen a resurgence of their music industry thanks to the launch of streaming services and more innovative payment capabilities (paying for music using the phone number/email address instead of credit card details for example); nine of the top 10 fastest growing markets in 2015 were EMs.

Exhibit 73: Nine of the top 10 fastest growing markets in 2015 were EMs
Average music revenues growth, 2012-2015



Source: IFPI, Goldman Sachs Global Investment Research.

Exhibit 74: Many EM music markets are already highly digital
Digital music share of total recorded music (broken down by genres)



Source: IFPI, Goldman Sachs Global Investment Research.

We see various routes available to tap into the EM opportunity such as pre-paid models, low ARPU subscriptions, ad-funded models or telecom bundles. The importance of local content also paves the way for the emergence of indigenous companies, such as QQ Music (China), KKBOX (Taiwan), MelOn (South Korea) and Saavn (India). In China for instance, local repertoire accounts for 80% of music consumption, Korean and Japanese pop another 10% and international only 10%, according to IFPI.

We calculate that a 1% increase in paid penetration assuming a monthly price of $4 (the current average price of an Apple Music or Spotify subscription in EM) would generate $1.5 bn of additional revenue or a 10% uplift to the current global recorded market.

Exhibit 75: A 1% increase in paid streaming penetration could bring an incremental c.$360 mn revenue assuming $1 ARPU and $1.5 bn revenue assuming $4 ARPU
Global paid streaming penetration vs. ARPU – scenario analysis

EM		Paid streaming penetration						
		0.20%	0.5%	1.0%	2.0%	3.0%	4.0%	5.0%
Monthly price	1.0	0.073	0.181	0.363	0.726	1.089	1.452	1.814
	2.0	0.145	0.363	0.726	1.452	2.177	2.903	3.629
	3.0	0.218	0.544	1.089	2.177	3.266	4.355	5.443
	4.0	0.290	0.726	1.452	2.903	4.355	5.806	7.258
	5.0	0.363	0.907	1.814	3.629	5.443	7.258	9.072
	6.0	0.435	1.089	2.177	4.355	6.532	8.709	10.886

Source: Goldman Sachs Global Investment Research.

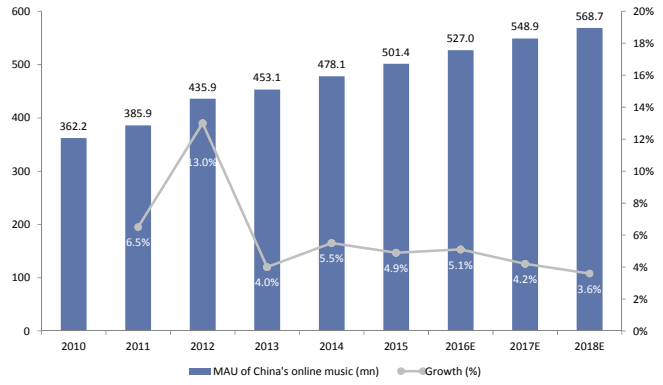
China case study: Local tech giants drive greater monetization of music content
China offers a useful case study of a large, under-monetised music market plagued by piracy where streaming is opening up sizeable new monetization avenues at a time when the value of IP is being increasingly recognized. Streaming drove a 64% yoy increase in the Chinese recorded music market in 2015. However, at $169.7 mn, it remains the 14th largest market globally behind Sweden (despite boasting a GDP that is 22x larger).

We see significant growth potential with the Chinese online music industry already counting 501 mn users in 2015 according to iResearch, which is the largest user base in the world and more than the entire population of the US. The market is estimated to be worth RMB9.6 bn in 2016 (China Economic Net). The three major local internet players or BAT (Baidu, Alibaba, Tencent) play a crucial role in driving music growth by:

- **Signing licensing deals with various international and regional record labels therefore helping enforce IP protection.** Baidu paved the way for monetization of digital music in China in 2011, when it signed an agreement with One-Stop China, a JV between UMG, Warner Music and Sony. Since then, Alibaba has signed deals with Universal Music Group and BMG, and Tencent sealed exclusive agreements with Sony, Warner Music and South Korea's YG Entertainment. Meanwhile, government regulation has been tighter against piracy with China's National Copyright Administration (NCA) last year ruling that all unlicensed content be removed from music platforms.
- **Leveraging their massive reach to attract customers.** Baidu Music had 150 mn monthly active users (both free and paid) as of December 2015. Tencent's QQ Music has nearly 100 mn daily active users and 400 mn monthly active users. Following the merger with China Music Corporation (CMC)'s music streaming services Kugou and Kuwo, iResearch estimates that QQ Music now has 800 mn users, 56% of the Chinese mobile-music market and 60% of all available music rights in China.
- **Offering users an easy way to pay for music subscriptions** through their own wallets (e.g. Alipay, WeChat wallet). While the main route to monetization will remain ad supported streaming in our view, we see encouraging evidence of greater consumer willingness to pay for music: 10 mn of Tencent's 400 mn monthly active users are paying (source: Mashable). In December 2015, Singaporean artist JJ Lin sold 610,000 copies of his single 'Twilight' on QQ Music in just one week for as little as RMB2 per download. A survey from iResearch found that nearly 57% of QQ Music's users in China would have paid for something on their music apps this year while a further fifth are open to paying in the future.

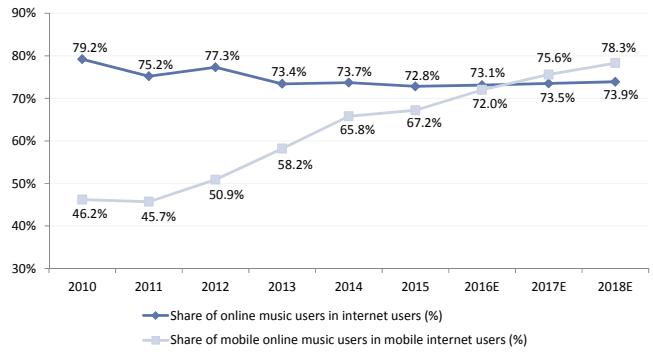
Interestingly, QQ Music is reportedly profitable (Digital Music News, August 2) which could be credited to Tencent's capacity to cross sell various products such as concert tickets as well as more favourable licensing deals with labels (according to Mashable).

Exhibit 76: Chinese online music users expected to reach c.569 mn by 2018
China's online music users 2010-2018



Source: iResearch, CNNIC.

Exhibit 77: A large proportion of users listen to music on mobile in China
Penetration of China's online & mobile Music 2010-2018



Source: iResearch, CNNIC.

Exhibit 78: Comparison of China music streaming services
China music streaming services

Music service	Parent company	Ad-funded offering	Paid Model	Pricing	Number of users	Paid Subscribers	Catalogue size	Deals with record labels	Comments
QQ Music	Tencent	Yes	Monthly subscription/ download package	RMB 10 per month / RMB 8 for 300 songs	400 mn MAU, 100 mn DAU	10mn paying users	15 mn	200 deals incl. exclusive rights to Sony Music and Warner Music in China	Also sells concert tickets and offers live streaming of concerts
Kugou	Tencent	Yes	Monthly subscription/ download package	RMB 10 per month / RMB 8 for 300 songs	222 mn mobile MAU	10mn paying users		40 labels including Sony/ATV, UMG	Merged with Kuwo and Omusic in 2015. Can also live stream concerts
Xiami	Alibaba		Monthly subscription	RMB 10 per month	20 mn MAU		2.5 mn	Various including Universal Records, Rock Records and HIM International Music	
Alibaba Planet (previously TTPOD)	Alibaba		Monthly subscription	RMB 12 per month	300 mn (2012)		2.5 mn	BMG Records, Rock Records and HIM Records	Also acts as a music marketplace for artists, producers to connect
Baidu Music	Baidu	Yes	Monthly subscription	Premium Service - RMB 10 per month	150 mn			UMG, BMG, various Chinese labels	
Apple Music	Apple	No	Monthly subscription	RMB 10 per month			30 mn		
Migu Music	China Mobile		Monthly subscription	RMB 10 per month	> 100 mn		4.2mn		Limited download music service
NetEase Music	NetEase	Yes	Monthly subscription/ download	RMB 8 per month	> 100 mn		5 mn		
Duomi Music	A8 New Media Group		Monthly subscription/ download	RMB 8 per month / RMB 3 for 100 songs					

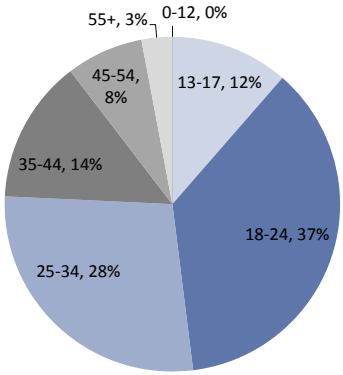
Source: Company data, Trade Press, Goldman Sachs Global Investment Research.

3. Gen Z and Millennials: The ideal audience for streaming

The changing media consumption habits of Millennials and Generation Z (more mobile, cross-platform and connected than their Millennial predecessors) are particularly beneficial to the music industry as a greater share of their spare time is being spent on music (along with social media), as opposed to watching TV and reading. Mobile music streaming is particularly suited to younger age groups with a study from ComScore showing that 4 out of the top 10 mobile apps used by Millennials are music related.

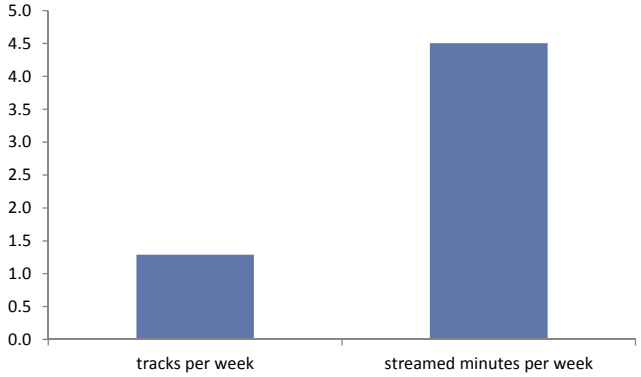
Their inherent characteristics of being "digital natives", focused on experience and convenience, make them the ideal targets of music streaming services which can be tailored for any taste, different budgets (ad-supported, student plans, family plans) and most importantly for any device. Millennials already spend a higher absolute amount of money on music than the average population in the US, which is mainly attributable to live music and paid streaming. The 13-17 year old age group, while having a smaller budget than the average population, already spends as much on paid streaming than the average American on an absolute basis. Spotify reports that Gen Z and Millennials (13-34) account for 77% of users across its markets. In the US, Millennials alone (18-34) account for 72% and spend 4.5 bn minutes streaming listening to 1.3 bn tracks every week (143 minutes per day on average for those accessing Spotify on multiple screens).

Exhibit 79: 77% of Spotify' customers are Gen Z & Millennials



Source: Spotify

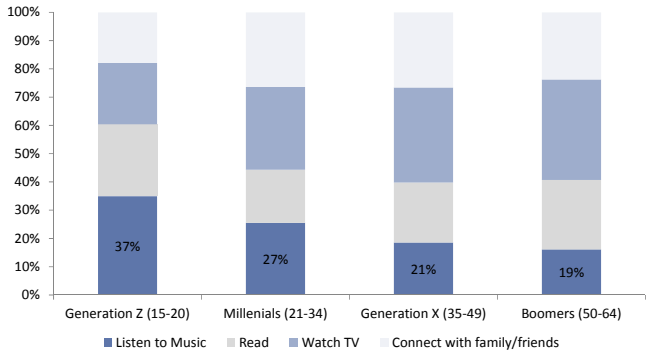
Exhibit 80: Millennials spend 4.5 bn minutes listening to 1.3 bn tracks every week on Spotify in the US



Source: Spotify/ AdWeek.

Exhibit 81: Gen Z and Millennials spend a higher proportion of their spare time listening to music

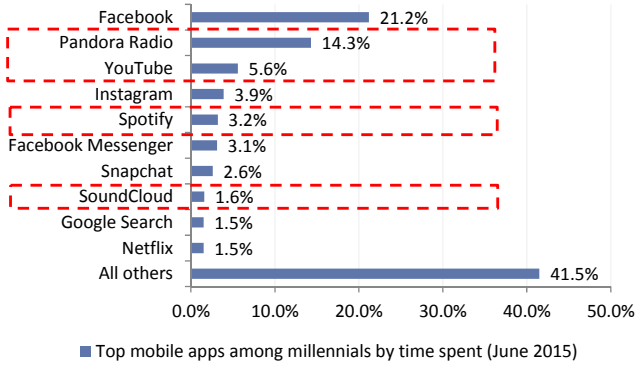
Top 5 spare-time activities, by generation (percentage selecting each as one of their top 3)



Source: Deloitte.

Exhibit 82: 4 out of top 10 mobile apps used by Millennials are music-related

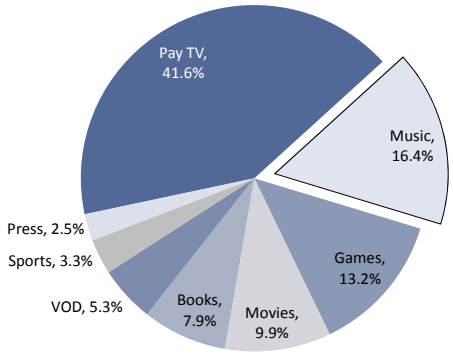
Top mobile apps among Millennials (18-34) by time spent (US, June 2015 – before Apple Music launch)



Source: ComScore.

Exhibit 83: Millennials spend 16% of their entertainment budget on music in North America

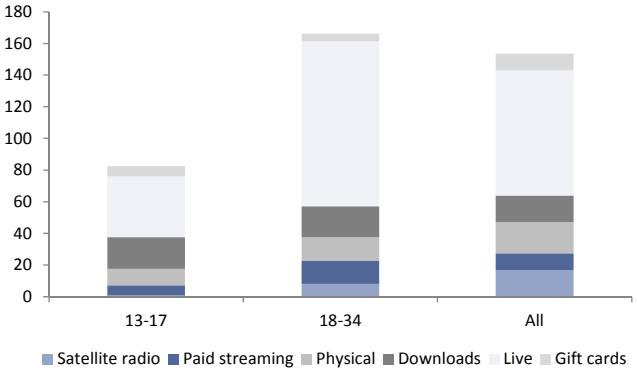
Breakdown of entertainment spend



Source: Deloitte.

Exhibit 84: In the US, Millennials spend more money on music than the average person and more on live music and paid streaming

Breakdown of music spend by genre



Source: Nielsen.

4. Telecom and tech companies leveraging music content

With the proliferation of premium data plans and smartphones, mobile carriers are now increasingly seeking out streaming music and video services as a means of driving upgrading and upselling opportunities as well as differentiation. Almost non-existent in 2011, there are now 11.5 mn telco bundled music subscribers globally according to MIDiA.

Telecom operators' large marketing budgets and sizeable existing billing relationships make them ideal partners to (1) enter a new market at little cost, especially in EM where subscription ARPUs are lower and credit card penetration remains low, and (2) reach younger demographics (whose bills are paid by parents). While such deals are dilutive from an ARPU perspective (27% according to Deezer), we believe that margins are broadly similar given lower marketing and customer acquisition/retention costs.

In parallel, large tech companies have also made a major foray into music streaming over the last three years as a way to better lock users into their ecosystem and sell more advertising (Google), devices (Apple) and products (Amazon).

- Google launched a dedicated music streaming service in 2011, Google Play Music, which includes a $9.99 "all you can eat" subscription option (since 2013) and an ad-supported free tier (since 2015). It presents a number of additional features such as free online music storage (up to 50,000 songs), a self-publishing platform Artist Hub for artists and music sharing via Google +. In 2015, it launched YouTube Red, which enables users to access all YouTube content free of ads and includes the premium version of Google Play Music for $9.99 a month ($12.99 for iOS users).
- Apple bought headphone maker and music streaming service Beats for $3 bn in May 2014 and launched a paid only subscription service Apple Music in June 2015 in a move to compensate declining digital music sales at iTunes.
- Amazon launched a free music streaming service in 2014 with over one million songs for Prime customers ("Prime Music") and is reported to be launching soon a paid music subscription service that would cost $10 pm for unlimited access on any device and $4-5 for unlimited access exclusively on Amazon's Echo Player (MBW, September 2, 2016).

Exhibit 85: Selected streaming services/ telecoms partnerships

Telecoms Company	Country	Partnership	Launch date	Price	Package details	Firm Rationale	Additional Details
EE	UK	Apple Music	Aug 2016	6 months free, £9.99 thereafter	- Offered both to new EE customers, and those renewing their contracts	- Increase the amount of music streamed over its network	
Bouygues	France	Spotify	Jan 2015	Free	- Bonus for subscribers to Sensation 3GB plans and above	- Enhance customer experience by expanding services and content	- Unlimited smartphone, tablet or computer access to Premium offer of <30m titles, with offline listening.
Orange	France	Deezer	Dec 2014	€2.99/month for 3 months (or €1/month for 6 months if you are a Play or Jet customer); €9.99 thereafter	- Standalone offering through Orange platform	- Importance of new digital services to attract customers	- Unlimited music listening, ad-free - On your mobile, tablet, PC or TV - Listen without network (offline)
Sprint (SoftBank)	US	Spotify	May 2014	Free trial of Spotify	- Sprint subscribers on its tiered "family plan" will get discounts to Spotify subscriptions once the trial period ends - Family (1-5 people): 6 months free; $7.99/month onwards - Family (6-10 people): 6 months free; $4.99/month onwards - All other customers: 3 months free; $9.99/month onwards	- Sprint gets cachet with the cool kids from an association with the market-leading music streaming service – and, assuming its customers appreciate access to a large library of music, a valuable tool to reduce customer churn.	- Coincide with the Spotify partnership, Sprint also unveiled a special version of HTC'S One M8 handset featuring HD audio technology supplied by Harmon Kardon.
Globe Telecom	Philippines	Spotify	Apr 2014	Free for prepaid subscribers	- Globe Telecom customers to get Spotify Premium with new GoSURF mobile plan - mobile internet access and Spotify for P10/ day Spotify premium P129/ month	- Strengthens its vision to provide an enriched online experience and access to free online content.	- Exclusive partnership with Globe Telecom, the best free music experience in the history of the smartphone - available now Instant access to over 30m songs
Telefónica	Spain, Germany, LatAm	Napster	Oct 2013	$4.90/month	- Speedy fixed broadband and Movistar mobile broadband products - Available as Napster Web & Napster Premium	- Increase attractiveness of mobile packages to operators in Europe and Latin America - Bolster the launch of 4G networks globally	- First carrier to release Firefox OS-based smartphone
SFR	France	Napster	Sep 2013	Free add-on for 4G SFR customers	- "Napster Decouverte" package: 2 hours of calls, unlimited SMS/MMS & 2 GB of mobile data/ month - Premium music service offered for €9.95/ month as an Extra service	- Add innovative content to provide a better experience of 4G	- Five Napster options on monthly basis & access <20 million songs – online and offline – using smartphones and tablets. - Available for iPhone, iPad and iPod Touch & smartphones using Android operating system
Vodafone	UK	Spotify	Aug 2013	Free for 6 months, £4.99/ month thereafter	- Red 4G plan priced at £26 or more/ month - Spotify unlimited: £4.99/ month - Spotify Premium: £9.99/ month	- Emphasize worth of 4G offering	- Spotify can be chosen as content option - Available on multiple compatible devices
Telenor	Norway, Thailand, Hungary	Deezer	Oct 2012	Free for three months, HUF 1390/ month thereafter	- Content add-on for customers with existing packages - Five different 'Hipernet' price plans: Start, Active, Medium, Heavy & Pro offering download speeds of 5/1-60/10 Mbps, data allowance of 3-30GB & extra service allowance.	- Capitalize on their position as a provider of a legal alternative to pirated music	- Access to 18m tracks on phones, PCs or tablets at any time.
Deutsche Telekom	Germany	Spotify	Aug 2012	£4.99/month: Spotify Unlimited £9.99/month: Spotify Premium	- Special Complete Mobile Music Tariff: €29.95 (£23.95)/month - Add Spotify Premium for €9.95 (£7.95)/month - €39.95/month with new Smartphone	- Claiming the platform's integration with Facebook and other social networks was a major driver behind the deal and indicative of where the industry is heading. - Gives operator exposure to new audiences	- Consumers able to listen to more than 19m songs on their smartphone, tablets, or PCS, both online and offline without impact on their data limits. - All tariff bundles include call flat, data flat and SMS allnet flat besides the Spotify Premium.
Virgin Media	UK	Spotify	Jul 2011	Spotify Premium free for three months with Premiere & VIP collections	- **Premiere**: unlimited broadband, 60Mb download speeds, free wireless Super Hub, free connection, 200 channels (43 HD) 2x 500GB Tivo boxes: £25/month for 6 months & £52/month thereafter - **VIP**: 225 channels, 2x 1TB TiVo boxes, anywhere Virgin TV access: £50/ month for 6 months, rising to £104.45/ month thereafter - Catch Up TV services & Virgin TV On Demand	- Boost appeal of Virgin Media's bundled TV, broadband and telephone services.	- Access millions of tracks from thousands of artists, online, on mobile or through exclusive Spotify app on Virgin Media's TiVo-powered digital TV service
KPN	Netherlands	Spotify			- Streaming service comes free as part of a bundle package		
Mobilcom-Debitel	Germany	Juke			- The streaming service will now come bundled on the telecom's mobile platforms		- New customers of mobilcom-debitel will have access to different tiers of the service, incl. a subscription service with unlimited access to Juke's library of more than 20m songs or access to the library for a fee added to their service contract.

Source: Press reports.

A rising tide lifts (almost) all boats

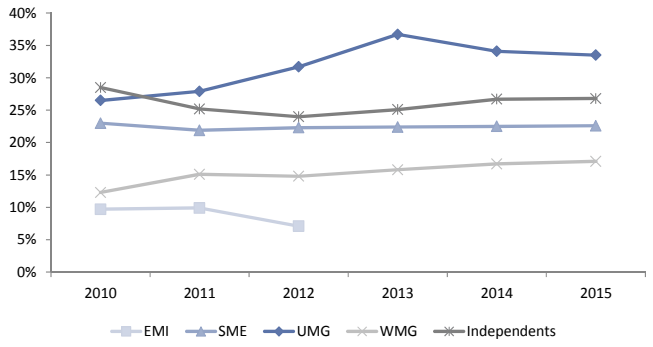
In addition to the structural and regulatory tailwinds highlighted above, we believe industry responses will be critical in shaping the future growth of the industry which only started to recover in 2015 after almost two decades of decline. We would expect some level of coordination among labels and platforms to maximize that growth potential. As a result, we believe the split of revenue pools will remain broadly unchanged in the near to medium term.

Labels have the most to gain from the growth of streaming and growing competition among distributors

Recorded music companies or labels perform a vast array of functions from the discovery and development of artists to the marketing, sale and licensing of their recorded music in various formats. Labels also increasingly engage in ancillary activities such as merchandising, sponsorship, live performance, artist management, etc., which are often referred to as "artist services and expanded rights" agreed as part of "expanded rights deals" or "360° deals."

The recorded music industry is dominated by three companies (Universal Music, Sony Music, Warner Music) which commanded 73% market share in 2015 according to Music & Copyright. The industry has experienced a wave of consolidation over the past few decades, the most recent sizeable deal being the acquisition of EMI Recorded Music by UMG in 2012 for €1.4 bn. The remaining 27% of the market is extremely fragmented, made up of thousands of independent labels. This concentration helps the labels maintain a strong negotiating power with the platforms – note that the distributors' cut of c.30% has hardly moved over the past 15 years despite the launch of downloads and streaming services by large players including Apple.

Exhibit 86: The recorded market is dominated by three majors
Global recorded music market revenues, % market share



Source: Music & Copyright.

Exhibit 87: Major three labels compared

	Universal Music Group (UMG)	Sony Music Entertainment (SME)	Warner Music Group (WMG)
Presence	>60 countries	30 countries	>50 countries
Employees	6,967	c.3,000	c. 4,200
Labels	>100	>20	>200
Record labels	Interscope Geffen Capitol Music Group Republic Records Def Jam Recordings Polydor Island Records	Columbia Records Warner Bros. Records Epic Records RCA Records Arista Nashville Legacy Recordings	Atlantic Records Asylum Big Beat East West Electra Erato
Publishers **Copyrights managed**	UMPG 3.2m copyrights	Sony/ATV 4m copyrights	Warner/Chappell > 1.2m copyrights
Top artists 2015	Taylor Swift Justin Bieber Sam Smith The Weeknd Drake	Adele One Direction David Bowie Meghan Trainor Sia	Ed Sheeran Coldplay Wiz Khalifa Mark Ronson Jason Derulo
Other major artists	ABBA Louis Armstrong The Beatles Andrea Bocelli Elton John	Beyonce Mariah Carey Celine Dion The Fray Michael Jackson	Linkin Park Michael Buble Bruno Mars David Guetta Prince

Source: Company data, Goldman Sachs Global Investment Research.

As highlighted earlier, we see greatest value growth potential in the recorded segment as streaming improves the monetization of music content (reduction in piracy rates, more favourable royalty structure notably in the US, higher ARPU when migrating customers onto the paying tier) and creates new revenue streams.

The recorded music industry has recently turned a corner, with the proliferation of subscription streaming driving an improvement in global recorded music revenues from a 6% pa decline over 2007-2010 to a 1% pa decline over 2011-14, and 3% yoy growth in 2015, the fastest growth recorded since 1998. We expect growth to accelerate further from here, as confirmed by 1H16 trends. Three of the top 5 markets that have reported so far (the US, Germany, France) posted c.6% revenue growth on average in 1H16, following flat performance in FY15. Even the most advanced markets in terms of paid streaming penetration such as Sweden and Norway (over 20% penetration - Deezer even estimates Sweden is close to 30% as of September 2016) saw an acceleration to c.8% in 1H16 after +5% growth in FY15. We forecast the recorded music market to grow 4% in 2016, 5% in 2017 and pick up to 6% pa after 2018. Overall, we believe the recorded music segment should return to its 1999 peak of $29 bn by 2027, from $15 bn today.

Exhibit 88: Recent music data points confirm the recorded music industry turnaround
Recorded music revenue growth by market, % yoy change

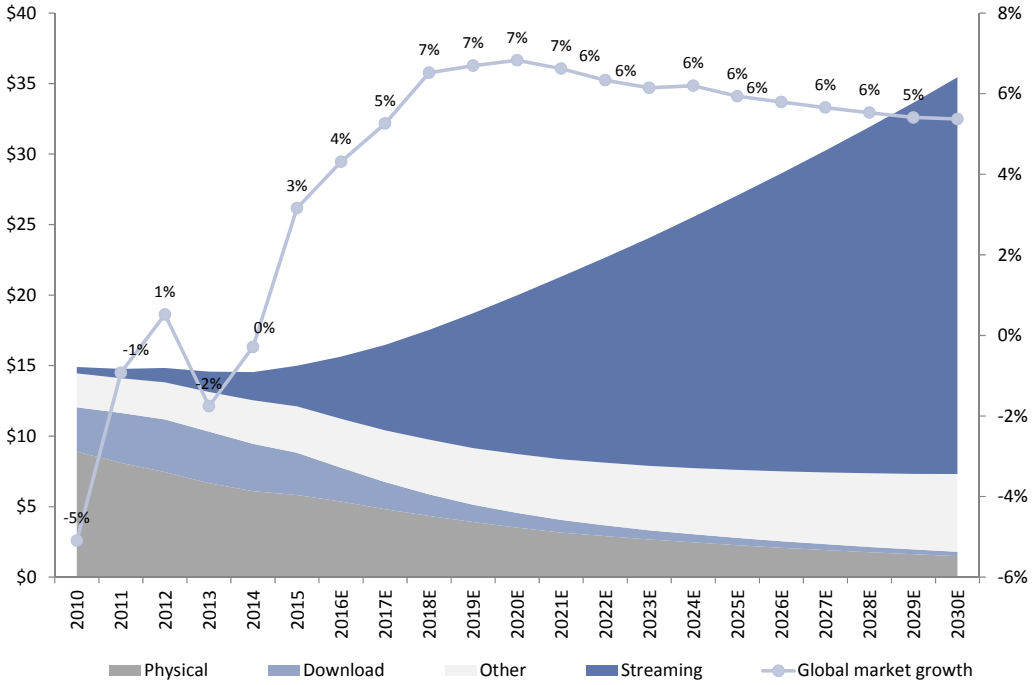
Recorded music	FY 14	1H 15	2H 15	FY 15	1H 16
TOP 5 Markets					
US	-0.7%	-0.5%	2.4%	0.9%	8.1%
UK	-2.8%	-5.0%	6.1%	0.6%	
Japan	-2.6%	1.1%	4.9%	3.0%	
Germany	1.8%	4.4%	4.8%	4.6%	3.6%
France	-5.3%	-7.0%	-2.4%	-4.7%	6.0%
Nordics					
Sweden	0.0%	4.2%	11.1%	7.6%	8.6%
Finland	-9.0%	0.5%	5.0%	2.7%	
Denmark	3.8%	0.4%	2.6%	1.5%	
Norway	-2.5%	7.0%	-1.8%	2.6%	7.8%
Southern Europe					
Spain	5.4%	10.9%	9.0%	10.0%	4.0%
Italy	1.5%	22.3%	27.9%	25.1%	

Source: RIAA (US), IFPI, unless local data available.

We believe labels have the most to gain within the value chain, given they receive 55%-60% of a platforms' revenue as royalties which is the same across streaming, physical or downloads. We do not foresee a major change in this share in the near term as distribution fragments and digital increases the complexity of the industry. Labels will have a vested interest in keeping a minimum level of competitive tension among platforms, assuming they have learnt from past mistakes such as allowing the formation of a monopoly in distribution. The outcome of their (re)negotiations with YouTube, Spotify or Amazon in the coming months and regulatory changes will be key in this regard. That said, we believe streaming platforms will be able to increasingly leverage the vast amount of user data to cut better deals with labels over time.

As such, we estimate that streaming will represent a $28 bn market by 2030 and will enable the overall revenue pie for labels (i.e., recorded music market) to return to its 1999 peak of $29 bn by 2027 and reach $36 bn in 2030. This compares to the current revenue pool of $15 bn, of which $9 bn is at risk (physical and download sales).

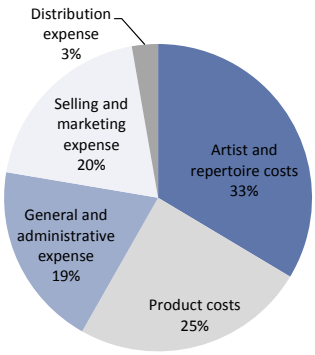
Exhibit 89: Streaming: A $28 bn market opportunity by 2030
Global recorded music market revenues ($ bn, LHS) vs. global revenues growth (%, RHS)



Source: IFPI, Goldman Sachs Global Investment Research.

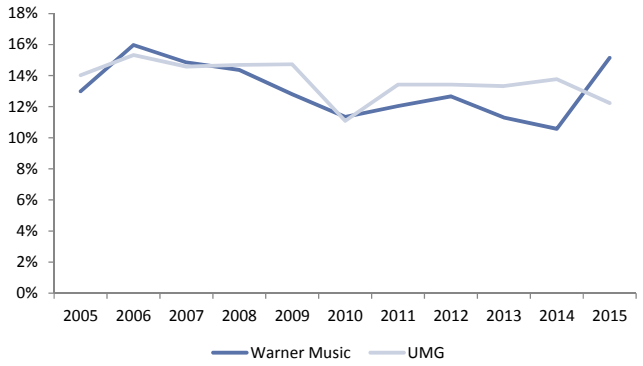
The potential expansion of the profit pool is even more meaningful as labels generate higher margins in digital where the cost of manufacturing, distribution, inventory and returns is removed. We estimate that labels currently generate around 15% EBITA margins in both streaming and download compared to 8% in physical. Over time, we believe streaming margin could grow to 20%-25% given (1) more cost-effective marketing, (2) higher profitability of catalogue sales where development and marketing costs are lower than new releases, and (3) ongoing adaptation of the cost structure to a streaming world (conversion of fixed to variable costs, IT systems upgrade enabling greater efficiencies etc.). We expect however, disruptive forces such as the emergence of alternative labels to lead to a greater redistribution of profits to artists (artists and repertoire costs currently account for 30%-35% of labels' revenue netted of payments to publishers). Based on a streaming EBITA range of 15%-25%, we forecast $2-3 bn of additional profit to be unlocked from streaming, compared to current profit pool of $1 bn generated from physical and downloads.

Exhibit 90: Warner Music breakdown of recorded music costs
Warner Music breakdown of recorded music costs



Source: Company data.

Exhibit 91: Warner Music and UMG generate around 14% recorded EBITDA margin
Warner Music and UMG Recorded EBITDA margin



Source: Company data, Goldman Sachs Global Investment Research

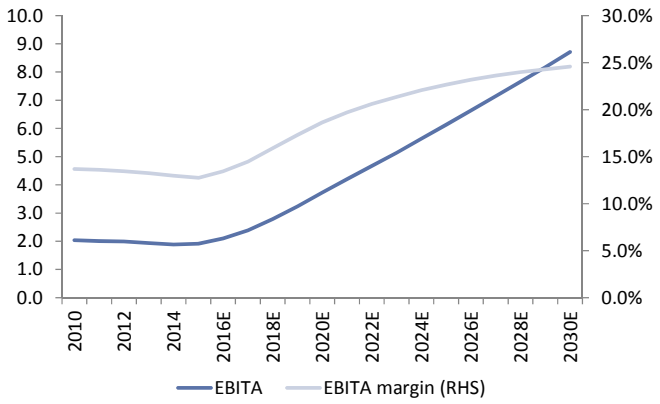
Exhibit 92: We estimate labels generate 15% EBITA margins in digital compared to 8% in physical; paid streaming is particularly attractive, commanding a profit per person that is 2-3x higher than other formats
Note: The publishers/songwriters receive their royalties via the labels in physical and downloads, but directly from the streaming services

Physical			Downloads			Streaming - ad funded + subscription			Streaming - subscription		
Average spend per person	$ 55.0	% of gross revenue	Average spend per person	$ 48.0	% of gross revenue	Average revenue per user	$41.0	% of gross revenue	Average spend per person	$120.0	% of gross revenue
VAT	$ 11.0	20%	VAT	$ 9.6	20%	VAT	$ 8.2	20%	VAT	$ 24.0	20%
Net revenue	$ 44.0		Net revenue	$ 38.4		Net revenue	$32.8		Net revenue	$ 96.0	
Split:		% of net revenue	Split:		% of net revenue	Split:		% of net revenue	Split:		% of net revenue
Distributor revenue	$ 13.2	30%	Distributor revenue	$ 11.5	30%	Distributor revenue	$ 9.8	30%	Distributor revenue	$ 28.8	30%
Record company revenue	$ 30.8	70%	Record company revenue	$ 26.9	70%	Content pool	$23.0	70%	Content pool	$ 67.2	70%
						Split Publishing	$ 3.3	10%	Split Publishing	$ 9.6	10%
						Split Record company	$19.7	60%	Split Record company	$ 57.6	60%
Record company costs		% of record revenue	Record company costs		% of record revenue	Record company costs		% of record revenue	Record company costs		% of record revenue
Pay away to publishers	$ 4.4	14%	Pay away to publishers	$ 3.5	13%						
Artists & Repertoire	$ 5.5	18%	Artists & Repertoire	$ 5.9	22%	Artists & Repertoire	$ 7.5	38%	Artists & Repertoire	$ 21.9	38%
Production & Distribution	$ 4.3	14%	Production & Distribution	$ -	0%	Production & Distribution	$ -	0%	Production & Distribution	$ -	0%
Other Product Costs	$ 1.5	5%	Other Product Costs	$ 2.7	10%	Other Product Costs	$ 4.6	20%	Other Product Costs	$ 13.4	20%
Gross margin	**$ 15.0**	**49%**	**Gross margin**	**$ 14.8**	**55%**	**Gross margin**	**$10.9**	**55%**	**Gross margin**	**$ 31.9**	**55%**
Selling & Marketing	$ 7.1	23%	Selling & Marketing	$ 6.2	23%	Selling & Marketing	$ 4.5	23%	Selling & Marketing	$ 13.2	23%
G&A	$ 4.7	15%	G&A	$ 4.0	15%	G&A	$ 3.0	15%	G&A	$ 8.6	15%
EBITDA Margin	**$ 3.2**	**10%**	**EBITDA Margin**	**$ 4.6**	**17%**	**EBITDA Margin**	**$ 3.4**	**17%**	**EBITDA Margin**	**$ 10.0**	**17%**
Depreciation	$ 0.77	3%	Depreciation	$ 0.67	3%	Depreciation	$0.49	3%	Depreciation	$ 1.44	3%
EBITA Margin	**$ 2.4**	**8%**	**EBITA margin**	**$ 3.9**	**15%**	**EBITA margin**	**$ 2.9**	**15%**	**EBITA margin**	**$ 8.5**	**15%**

+63% -26% +21% +118%

Source: Goldman Sachs Global Investment Research.

Exhibit 93: The recorded music profit pool growth is even more substantial
Recorded music profit pool ($ mn, LHS) vs. EBITA margin (%, RHS)



Source: Goldman Sachs Global Investment Research.

Quotes from WMG CFO on the outlook for the music industry and the impact of streaming

Eric Levin is Executive Vice President and Chief Financial Officer, Warner Music Group, a role in which he is responsible for the company's worldwide financial operations. He joined the company in 2014, having held a number of senior executive posts in the US and Greater China.

It seems like we've reached a tipping point for the recorded music industry – how do you see the growth path from here?

"We are optimistic about the long-term growth potential of the music business and for Warner in particular. Recent industry data is improving with real growth worldwide, led by subscription streaming. This is more than offsetting declines in physical and downloads."

How do you see the role of the labels in shaping this future recovery?

"We are laser focused on executing against our strategic priorities, which include having a steady stream of great new music, expanding our global presence, and embracing commercial innovation, including the shift to streaming. Every region around the world is at a different stage of transition to digital formats. It is our job as an industry leader to help our artists and songwriters navigate the complexity across countries to maximize potential globally."

How do you think the streaming distribution landscape will evolve?

"We are seeing heightened commitment to streaming from a myriad of large players, which is aiding consumer awareness and yielding higher adoption. Having many players is good for us as it creates competition for consumers' share of wallet which in turn benefits the entire industry. "

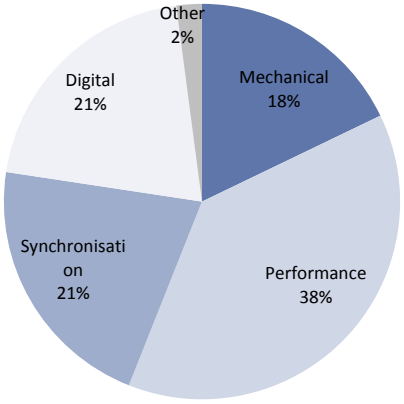
A lot more music is being consumed yet only a small portion of people pay for it – how can we address the issue of music monetization?

"It is imperative that monetization continues to improve and that artists, songwriters, labels and publishers are all fully and fairly compensated for their work. We have seen some encouraging signs from the EU but there is still a long way to go, as the value of music is still not being fully recognized."

Music publishers should benefit from streaming growth but to a lesser extent than labels

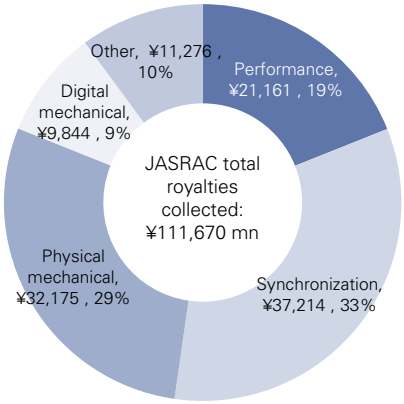
Music Publishing companies work for songwriters – they exploit and market musical compositions (of which they own/share the rights with songwriters) and receive royalties or fees for their use. Publishers derive royalty income (mechanical, public performance, synchronization royalties and other licenses) which they generally share 50/50 with the songwriters.

Exhibit 94: Mechanical (digital & physical) and Performance royalties each account for c.40% of revenue
Warner/Chappell breakdown of revenue



Source: Warner Music Group company data.

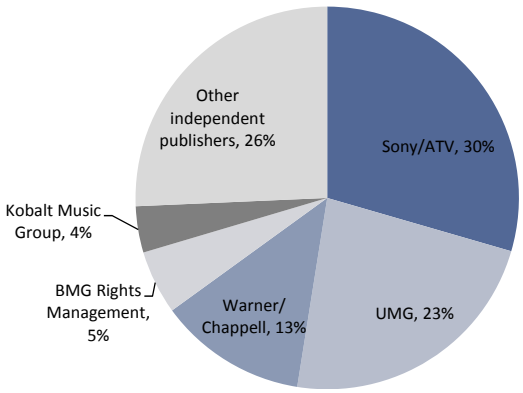
Exhibit 95: Publishing in Japan is dominated by Mechanical (38%) and synchronisation (33%) royalties
JASRAC 2015 royalties collected



Source: JASRAC.

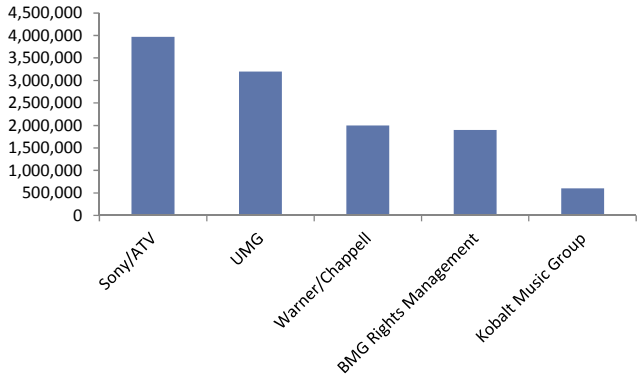
Similarly to recording, the publishing market is highly concentrated with the three majors commanding 66% market share and the top five companies commanding 75%. The industry has also seen a lot of M&A activity, the most recent being the Sony/MJ deal (approved in 2016) and the acquisition of EMI Publishing by Sony in 2012.

Exhibit 96: The publishing market is dominated by 5 players
Publishing market share, 2014



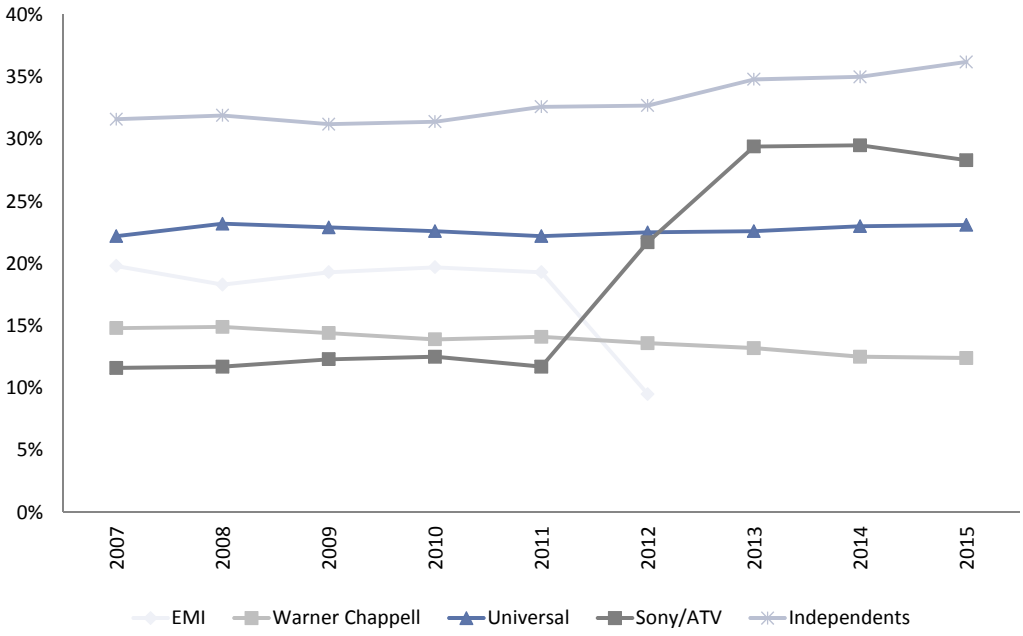
Source: Music Business Research.

Exhibit 97: … who control/ administer a large number of copyrights
Number of administered music copyrights



Source: Music Business Research.

Exhibit 98: Independents have gained market share (although this was partly boosted by the sale of assets by Sony/ATV to BMG)

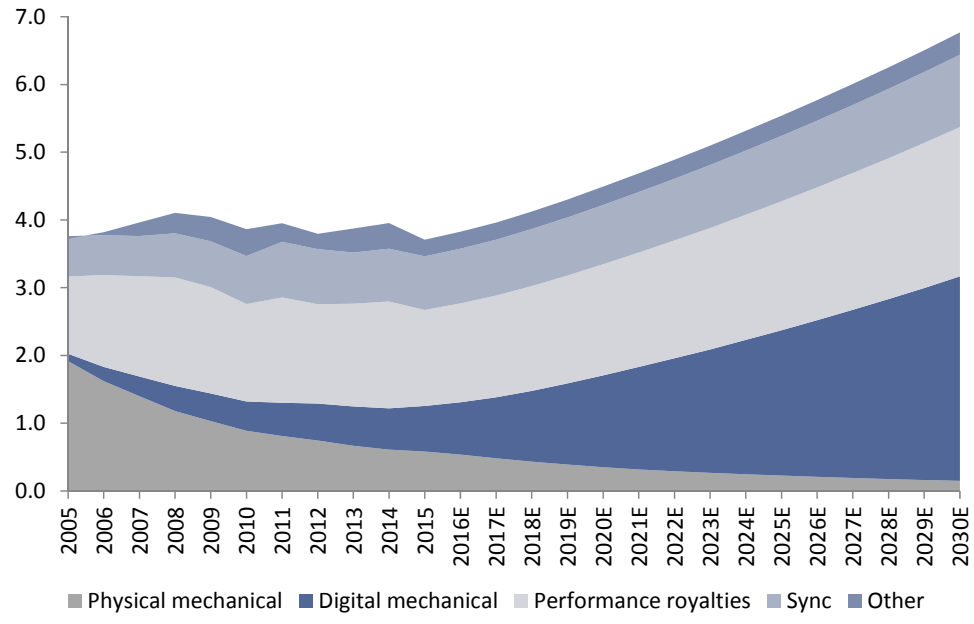


Note: Sony bought EMI Publishing in 2012 and had to divest some assets that were then acquired by BMG

Source: Statista.

The incumbent publishers, who so far have been more insulated from the digital disruption, also benefit from streaming growth although to a lesser extent than labels, as they receive a 10% cut of gross revenue as mechanical/performance royalties. We forecast an additional $3.5 bn of revenue potential from streaming, while the main revenue pool at risk (physical mechanical royalties) is currently worth $0.6 bn. Publishers also generate another $1 bn of revenue from synchronization rights which should continue to benefit from growing demand for music.

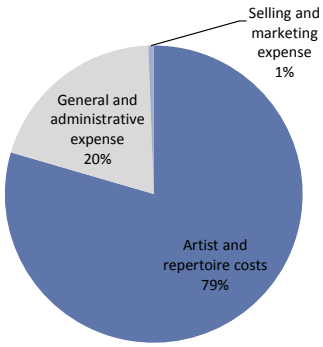
Exhibit 99: Publishing – a $7 bn market by 2030, partly driven by streaming
Global music publishing revenues, $ bn



Source: Company data, Goldman Sachs Global Investment Research.

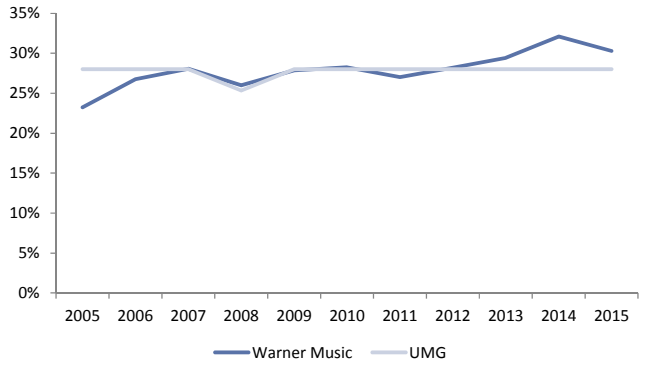
We estimate EBITA margins to be broadly stable at 26%-28%, implying c.$1 bn of additional profit to be generated over the next 15 years. The upside to margins could however come from a better leveraging of new digital technologies that can improve the monitoring and tracking of copyrighted music, and collection and onward payment of royalties. A shift towards more direct deals, thus circumventing the fragmented landscape of collection societies, could also present further upside. Against this, we expect publishers to redistribute a greater share of their profits to songwriters (to 55%-60% from 50% today) as a result of the pressure from alternative publishers.

Exhibit 100: Author royalties and repertoire account for the bulk of publishers' expenses
Warner/Chappell breakdown of costs



Source: WMG company data.

Exhibit 101: Major publishers generate around 28%-30% EBITDA margins (pre-corporate costs)
Warner/Chappell vs. UMG Publisher EBITDA margin



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 102: We estimate publishers generate 26% EBITA margins across all formats

Physical			Downloads			Streaming - ad funded + subscription			Streaming - subscription		
Average spend per person	$ 55.0	% of gross revenue	Average spend per person	$ 48.0	% of gross revenue	Average revenue per user	$41.0	% of gross revenue	Average spend per person	$120.0	% of gross revenue
VAT	$ 11.0	20%	VAT	$ 9.6	20%	VAT	$ 8.2	20%	VAT	$ 24.0	20%
Net revenue	$ 44.0		Net revenue	$ 38.4		Net revenue	$32.8		Net revenue	$ 96.0	
Split:		% of net revenue	Split:		% of net revenue	Split:		% of net revenue	Split:		% of net revenue
Distributor revenue	$ 13.2	30%	Distributor revenue	$ 11.5	30%	Distributor revenue	$ 9.8	30%	Distributor revenue	$ 28.8	30%
Record company revenue	$ 30.8	70%	Record company revenue	$ 26.9	70%	Content pool	$23.0	70%	Content pool	$ 67.2	70%
						Split Record company	$19.7	60%	Split Record company	$ 57.6	60%
Publisher revenue (paid by labels)	$ 4.4	10%	Publisher revenue (paid by labels)	$ 3.5	9%	Split Publishing	$ 3.3	10%	Split Publishing	$ 9.6	10%
		% of publisher revenue			% of publisher revenue			% of publisher revenue			% of publisher revenue
Songwriters & Repertoire	$ 2.4	55%	Songwriters & Repertoire	$ 1.9	55%	Songwriters & Repertoire	$ 1.8	55%	Songwriters & Repertoire	$ 5.3	55%
Gross margin	**$ 2.0**	**45%**	**Gross margin**	**$ 1.6**	**45%**	**Gross margin**	**$ 1.5**	**45%**	**Gross margin**	**$ 4.3**	**45%**
Admin and other	$ 0.7	17%	Admin and other	$ 0.6	17%	Admin and other	$ 0.6	17%	Admin and other	$ 1.6	17%
EBITDA Margin	**$ 1.2**	**28%**	**EBITDA Margin**	**$ 1.0**	**28%**	**EBITDA Margin**	**$ 0.9**	**28%**	**EBITDA Margin**	**$ 2.7**	**28%**
Depreciation	$ 0.09	2%	Depreciation	$ 0.07	2%	Depreciation	$0.07	2%	Depreciation	$ 0.19	2%
EBITA margin	**$ 1.1**	**26%**	**EBITA margin**	**$ 0.9**	**26%**	**EBITA margin**	**$ 0.9**	**26%**	**EBITA margin**	**$ 2.5**	**26%**

Source: Goldman Sachs Global Investment Research.

An interview on music publishing with…

Jane Dyball, CEO of UK Music Publishing Association

After spending 6 years at indie publisher Virgin Music in international copyright and licensing, Jane Dyball joined Warner/Chappell Music's Business Affairs Department. She eventually became SVP International Legal & Business Affairs in 2005 assuming responsibility for all WCM's business affairs worldwide ex US & Canada, alongside strategic issues such as collective rights management and digital rights. In October 2015, Jane was appointed CEO of the MPA Group of companies.

What is the role of a collection society?

The music publishers association that I run has a collection society called MCPS and that is collecting money on behalf of its publisher members. From a commercial point of view, almost all publishers use MCPS for broadcast licensing and for collecting monies from record sales, but not all publishers use MCPS for online licensing as this tends to be licensed on a multi-territory basis. The main sources of income at MCPS are therefore record sales, online and broadcast. Online income is increasing, album sales seem to have stabilised and broadcast is stable as well. MCPS is a mechanical right society that is administering reproduction rights as opposed to PRS in the UK, or ASCAP and BMI in the US, which are performing rights societies. In the UK, if you are a writer or a publisher you need to be a member of the performing rights society and you give PRS exclusive rights across all pretty much all types of performance income.

How does streaming impact the music publishers…?

Firstly, it is important to separate the paid subscription from the ad-supported streaming model. I think the ad supported model is a challenge to music publishers while the subscription model is an opportunity. As with any new business models, it is difficult to tell what your revenues are going to be. Under the traditional model, publishers are used to think in terms of record sales. They know that they would generate about 50p per album sold and they can therefore estimate how many albums they need to sell in order to recoup their advances. We are still struggling with the technology required to be able to easily process trillions of lines of data (vs. millions of lines before) that come with streaming. So there is a technical challenge, the flow is not yet real time, making it much more difficult for a publisher to know what a song that is streamed on Spotify is going to pay out.

… and songwriters?

You can look at that in a number of ways. Songwriting is a career you can pursue whether or not you are an artist. If you are an artist you have got access to other revenue streams like touring fees and endorsements. If you are a songwriter it is hard because you have a very speculative career based around having to pay for yourself, going to studio sessions not knowing whether you've got a song or a cut and that applies whether you are an unheard of songwriter or whether you are the most successful songwriter in the world. So if your income is dependent on ad supported streaming services it is very hard to get proper compensation for your revenues - that's one issue. The next issue is the amount of time it is taking to get the money through the pipes as it gives current songwriters a false impression of how much money they are earning from services. So there is a delay, there is the processing time, there are all sorts of problems with how ad-funded services want to account and how the societies want the latter to account. It is very likely that the money songwriters are seeing on their royalty statements is less than it should be. So what does a steady state look like? Once all that money is getting through, will they still be making enough money from streaming services? We are currently in a market where you cannot take any figures with any accuracy. However, another way to look at it is to say, overall, is the business growing or in decline? And overall the business is growing slightly.

What do you think could be done to address these inefficiencies?

To work properly the system requires invoicing protocols to be agreed between collection societies, and for societies to have the ability, preferably working together, to develop systems which can process and distribute many billions of lines of data in a timely and accurate manner.

Do you think the recent EC copyright draft directive could have any impact on the monetization of music content?

It is draft legislation at this stage so it's a step in the right direction, but could change significantly one way or another before it comes out. It doesn't put much

requirement on YouTube to do anything other than behave commercially which I expect YouTube would say they are doing anyway. I think it's too early to tell really but it is certainly a step in the right direction.

How are royalties set for publishers?

Subscription services are paying a share of the monthly subscription as royalties, but you don't know what your share of that is going to be as royalties are paid out on a basis of all of that money going into a big pot and being divided by the number of plays. So you don't know in advance the amount that will be paid out per play. If more people listen to the service during a particular accounting period then the per-play payment is going to reduce because it is a finite pot of money. So it is not going to be a straight line increase against the number of plays and the royalties that come out. In the case of an ad-funded service, the only source of income is advertising and therefore it is completely dependent on the strength of the advertising business.

What is your view on Apple's proposal to change the way songwriters are getting paid in the US for digital services? Any read across for Europe?

Things work very differently in Europe and all of the negotiations in Europe are happening individually with different companies behaving differently in the market. It would be great if there was a sensible per stream rate paid by all services. Certainly it is our hope that over time we will be able to drive up the rates so they properly reward the creative endeavors of those whose content it is, but that will be a slow process.

Do you expect the publishers' role to evolve to a more administrative role over time?

If you are a publisher, you are not in the business of setting up an administration office, you are in it to discover talent and invest in talent and see that talent become successful. However, it is essential that you have strong administration in order to properly collect all monies due.

How do the 3 major publishers differentiate from one another?

All three companies are run differently because they have different requirements at the executive level, but they largely perform the same job.

Will writers still need publishers and how easy is it for songwriters to change publishers?

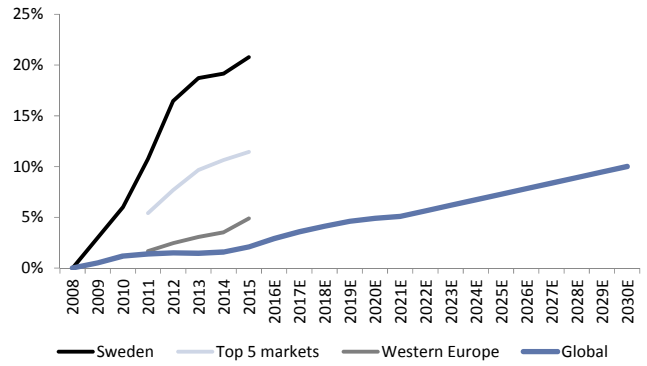
If you are a kid and you put your songs on YouTube and your songs are successful you will start to earn money from YouTube and you won't necessarily think about getting a publisher because you'll be getting some money from YouTube. However sooner or later you will think you are not getting any money from the BBC or television or someone has asked to use your song in a film and you don't know what to do…So sooner or later you will go looking for a publisher. How easy is it to change publisher? There have been lots of law suits over the years - Elton John was one of the first writers in the 70's who filed lawsuits because they'd been tied to publishing agreements for their whole career and those agreements started to be overturned. But now, it would be standard to do a deal that has 4 contract periods. The first contract period could last anything from 1 to 3 years and there is an option after that for the publisher to continue. Then usually when they exercise the option then money is paid out and maybe the deal terms improve slightly and that's all agreed at the beginning when you do your agreement and all publishers usually insist that writer have proper representation in that early negotiation. Usually, if they have been successful songwriters are not tied to a publisher for more than around 12 years.

Subscription streaming platforms have significant growth potential but also face growing competition

We see strong growth prospects for streaming services with the growth in smartphone penetration and improvement in connectivity enabling greater convenience and access on the one hand, the proliferation of online music services and bundles driving greater awareness and adoption on the other. We identify the main growth drivers below:

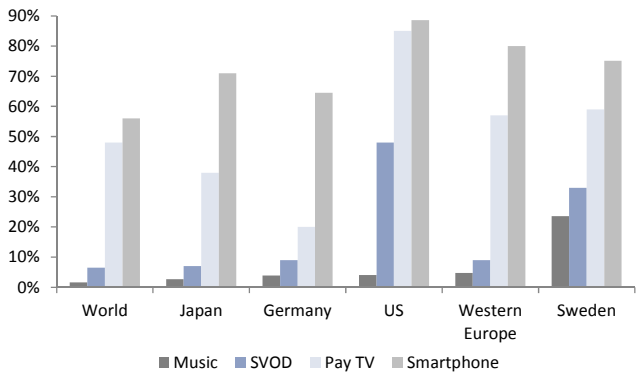
1) **Market penetration is currently low**, with 2% of smartphone owners subscribing to a paid streaming service globally and another 4% using a freemium, ad funded service excluding YouTube (140 mn). As discussed earlier, we forecast the subscription and non-subscription base to grow to 9% and 13% of smartphone users respectively by 2030.

Exhibit 103: We forecast global paid streaming penetration to reach 9% by 2030, slightly below the top five markets today and half of the rate attained in Sweden
Paid streaming penetration as % of smartphone subscribers



Source: IFPI, ZenithOptimedia, Goldman Sachs Global Investment Research.

Exhibit 104: Streaming penetration stands at 2% globally compared to 6% for SVOD and 48% for Pay TV
Paid streaming penetration as % of smartphone subscribers, SVOD penetration as % of broadband homes, Pay TV penetration as % of TV homes, Smartphone penetration as % of total population



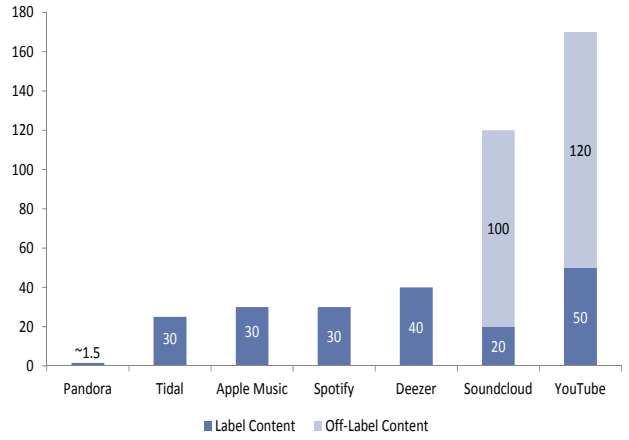
Source: IFPI, Digital TV Research, ZenithOptimedia, Goldman Sachs Global Investment Research.

2) The opportunity to segment the market to tailor to different tastes (local vs. global content, genres, etc.) and financial conditions (family vs. student plans, EM vs. DM), means that multiple players can co-exist and grow in our view.

- **Spotify** is the incumbent and leading music streaming service in the world with around 80 mn ad-funded users and 40 mn paid users across 58 countries (source: The Verge/Spotify). Relative to other streaming services, Spotify appears more mainstream and has a greater emphasis on younger demographics given the availability of discounted student plans and telecom bundled deals (Spotify reported that 77% of its users are Gen Z/ Millennials). Spotify's ad-funded freemium tier helps it reach a wider audience (basically anyone with a broadband/ mobile access and a connected device) which it then aims to switch onto its paid subscription service. The proportion of paid users increased from 7% in 2010 to 33% as of August 2016. Despite being the incumbent player, Spotify has hardly been affected by the launch of other streaming services, including Apple Music in June 2015. Spotify added 15 mn paid customers between June 2015 and June 2016, as many as the number of paid users it added between 2012 and June 2015 or even more than the number of paid subscribers it had cumulated since inception in 2008 until the end of 2014. This is an encouraging sign that multiple streaming services (with different market segmentations) can co-exist, and that the proliferation of new services contributes to awareness of such services and growth of the overall market.

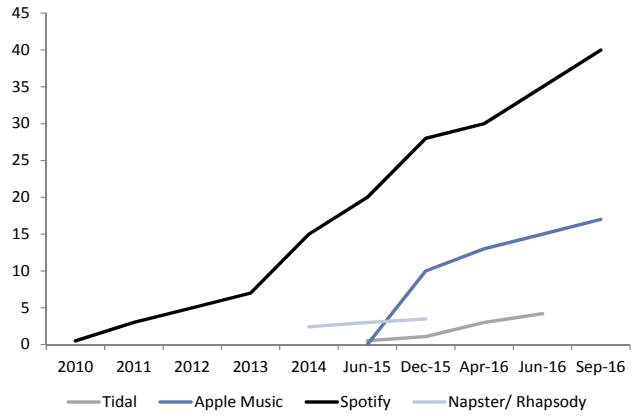
- Like Spotify, **Deezer** offers a freemium and a paid tier, but with the particularity of deriving a large portion of its subscribers from telecom partnerships (50% in 2016 from 80% in 2014 although 60% were then inactive bundled users). Deezer recently launched a paid only streaming service in the US.
- **Apple Music** operates a paid only service with no ad-funded free tier. It has a greater bias towards families (with its $14.99 family plans) and iTunes accounts giving it an enviable access to 800 mn credit cards on file. Apple has also made its service available to Android smartphones. Launched in June 2015, the service counted 17 mn paid subscribers as of September 2016.
- **Tidal** operates a more niche, high end paid-only service with a greater focus on exclusivity (nine exclusive album releases) and high sound quality. As of March 2016, 45% of subscribers were on the $19.99 hi-fidelity, lossless audio/video tier, despite costing twice as much as the standard tier (source: Billboard). Unlike other platforms it is also backed by a number of renowned artists, counting 16 artist-owners at launch who each received a 3% stake in the company (incl. Jay Z, Beyonce, Rihanna, Madonna, Kanye West, etc.). The launch of exclusives has had a clearly favourable impact with the number of subscribers jumping to 2.5 mn from 1 mn after the exclusive release of 'The Life of Pablo' by Kanye West in February 2016 (source: TMZ). Tidal said it added another 1.2 mn subscribers after the release of Beyonce's 'Lemonade' in April 2016 (NYT, May 13, 2016).
- **YouTube Red** is a paid-only service launched in October 2015 that gives access to all YouTube video content free of ads as well as Google Play Music. It also includes exclusive access to YouTube Red Originals which are new, original shows produced by some of YouTube's biggest creators. The service is so far only available in the US, Australia and New Zealand, with no subscriber figures having been made available as yet.
- **Amazon** offers over one million songs for free for its Prime customers ("Prime Music") and is reported to be soon launching a paid music subscription service that would cost the usual $9.99 pm for unlimited access on any device and $4-5 for unlimited access exclusively on Amazon's Echo Player (MBW, September 2, 2016). Amazon currently counts over 300 mn active customer accounts.
- **Pandora** recently signed a direct licensing agreement with the major labels to launch an on-demand paid service with multiple price tiers in the US later this year, alongside its existing internet radio service (which has a base of 78 mn active users). MBW (September 19, 2016) suggested that Pandora will launch three tiers including a $5 on-demand service with more limited functionality (which only allows users to soft-download a limited number of tracks) and an $9.99 unlimited on-demand service.
- **iHeartRadio** recently announced plans to enter the on-demand market in January 2017 with two new packages - iHeartRadio All Access, a $10 per month full on-demand music subscription similar to Spotify Premium or Apple Music, and iHeartRadio Plus, a $5 per month ad-free radio listening offer according to MBW. iHeartRadio already signed all three major labels ahead of the planned launch. IHRT digital radio service, iHeartRadio, currently counts c.90 mn users.
- **Local services** such as Saavn in India or QQ Music in China are more focused on local repertoire and have their own specific features.

Exhibit 105: Streaming platforms libraries compared
Number of tracks available on digital streaming services (mn)



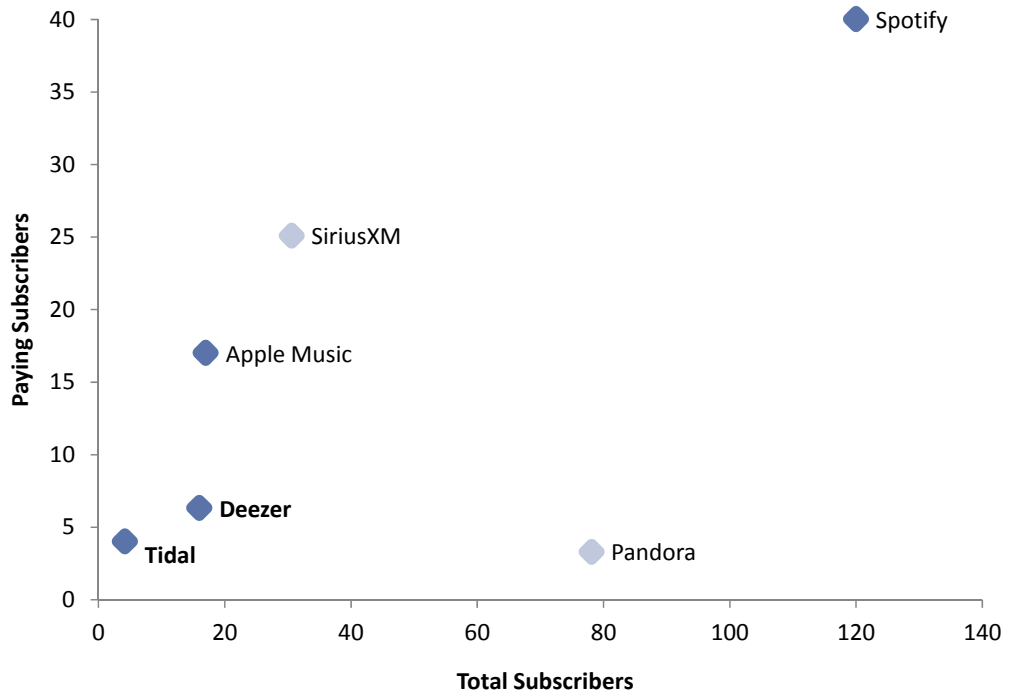
Source: Activate, press reports.

Exhibit 106: The launch of new streaming services has not had any major cannibalisation effect
Number of paid subscribers (mn)



Source: Spotify, Billboard, Napster.

Exhibit 107: Spotify leads among streaming services both in terms of paying and total subscribers
* Dark blue: interactive streaming services; paying and total subscribers (m)



Source: Company data, press reports.

Exhibit 108: Key platforms and their differentiating features

Streaming Service	Total Users	Paying Subs	Type of Streaming	Free Version?	Paid Version	Exclusives	Defining Features	Target Audience
Apple Music	17 mn	17 mn	Interactive	**Yes**: 3 month trial	**$9.99/month** **$14.99/month**: **family plan** (up to 6 people, each with their own account)	Taylor Swift Drake Frank Ocean Chance the Rapper	Simple interactive streaming Curated playlists Beats 1 radio Music available offline	Higher-end and users of Apple Products (focus on families)
Spotify	120 mn	40 mn	Interactive	**Yes**: ads, limited listening time	**$4.99/month** for desktop & laptop, no ads. **$9.99/month** lets you use all devices, no ads (1-month free trial)	-	Simple interactive streaming Curated playlists Music available offline	Main-stream (especially Students)
Tidal	4.2 mn	4 mn	Interactive	**Yes**: free for 30 days	Tidal Premium (standard sound quality) - **$9.99** standard plan/ **$8.49** value plan. Tidal HiFi (hifi sound) - **$19.99** standard plan/**$16.99** value plan **Family Plan**: Gives other members (up to 4) their own logins for 50% of normal fee	Kayne West Beyonce Prince Jay-Z Rihanna	Simple interactive streaming Ability to import playlists from other streaming devices through Soundiiz.com	Music enthusiasts (through high quality sound & exclusives)
Deezer	16 mn	6.3 mn	Interactive	**Yes**: ads, unlimited music on computer & tablet	**$9.99/month** (ad-free, 1-month free trial) **$20/month**, high quality audio experience Deezer Elite (CD quality audio): £14.99/ month for 12 months & £9.99/ month for a year (£120 paid upfront), £9.99/ month for 2 years (£240 paid upfront)	-	Simple interactive streaming Curated playlists Music available offline	Main-stream & use in telco bundles
Sirius XM	30.6 mn	25.1 mn	Non-Interactive (Satellite Radio)	**Yes**: 7 day trial	Sirius Select: **$14.99/month** for over 140 channels. Sirius All Access: **$19.99/month** for 150+ channels and online listening. Sirius Mostly Music: **$10.99/month** 80+ channels ($4 extra to listen online)	-	Satellite Radio	Main-stream & use in cars
Pandora	78.1 mn	3.3 mn	Non-Interactive (Webcasting) Interactive service launching soon	**Yes**: limited skips, ads, reduced quality	PandoraOne: **$4.99/month** for new subscribers (from May '14); **$3.99/month** for existing subscribers Pandora Plus: **$5/month update of PandoraOne,** unlimited skips, no ads, replays, offline listening (4Q16 launch) **$10/month** full on-demand streaming service (4Q16 launch)	-	Users create their own radio station The Music Genome project generates recommendations	Main-stream
iHeartRadio	90 mn		Non-Interactive (Webcasting) Interactive service launching soon	**Yes:** limited skips, ads	iHeartRadio Plus **$5/month** ad-free offering (Jan 2017 launch) iHeartRadio All Access **$10/month** full on demand service (Jan 2017 launch)	-	Users create their own radio station or listen to live radio	Main-stream
Amazon			Interactive	**No**	**$9.99/ month** **$4/$5/month** for streaming on Echo	-	Standalone from Prime	Main-stream
YouTube Red			Interactive	**Yes:** YouTube	**$9.99/month** **$12.99/month** for iOS users	-	Watch videos ad free Offline viewing Listen to videos with the screen off	Users of YouTube

Source: Company websites, press reports.

3) Opportunity to better leverage their promotion capabilities (e.g. playlists), user data and customer relationships to (1) help in their future negotiations with labels, (2) drive more advertising revenue on the freemium tier (cf Spotify partnership with the Rubicon Project), and (3) create new adjacent revenues such as ticketing sales (cf Pandora's purchase of TicketFly). In particular, streaming services are becoming a much more important partner for labels and artists as their data analytics fundamentally change the way music consumption is measured and promoted and how new artists are being discovered:

- **Promotion capabilities:** we believe playlists will become an increasingly important promotion tool for artists with one in five plays on Spotify now occurring inside a playlist. Algorithms would even amplify the loudest voices as the highest trending artists will be brought forward in the suggested lists. Spotify's Discovery Weekly playlist of 30 tracks generated over half of the monthly streams for 8,000 artists in June 2016 according to the company and 40% of Spotify users listen to it.
- **User engagement:** while labels have never had control over the distribution and direct access to consumers, it has become much easier for artists to directly engage with their fans on streaming and social media platforms. Apple Music's Connect platform, for example, allows artists to directly reach their fans offering them the ability to post music, videos, photos and status updates in real time.
- **User data informs better decisions:** Labels can use the data to track digital sales and streams on different platforms. Artists can leverage social network statistics and listener data to adapt to their fans' ever changing tastes and even inform their tour

decisions. Social media in particular has become a critical tool for artists to ensure they stay relevant.

- **Artists are more easily discovered**: Labels are increasingly following the trending artists on SoundCloud or YouTube and the number of followers they have on social media platforms to sign up new artists.

4) Execution and innovation will become increasingly important. As having a comprehensive music library becomes a prerequisite, **differentiation through data analytics and curation capabilities** among the streaming platforms will become increasingly important to drive customer growth. This puts incumbent streaming platforms such as Pandora or Spotify at somewhat of an advantage as they have already accumulated a vast database.

- **The importance of personalized curation:** Consumers have never had it better in terms of convenience, discoverability and personalization of their music thanks to technology that is powering selection algorithms and integrating social network relationships. Spotify's "Discover Weekly" introduced in July 2015, which automatically generates a tailored two-hour playlist every week, is internet-scale curation demonstrating that algorithms can tailor a playlist to someone's tastes. It now has 40 mn users among the more than 100 mn Spotify subscribers (IEEE Spectrum, September 2016). Apple Music, on the other hand, has chosen a more human approach whereby leading music experts curate the music. Apple's Jimmy Iovine stated that "Algorithms alone can't do that emotional task. You need a human touch." Reports suggest that both Spotify and Apple Music hired radio veterans to help with their programming and curation capabilities (MBW, July 16, 2016), proving that a mix of the two approaches might bring the best results.
- **Platforms build brand loyalty**: The fact that the streaming services allow subscribers to create their own playlists, follow friends and engage with a community of followers ensures customers are committed to a service with little incentive to switch as song libraries are not typically transferrable from one service to another (exc. Apple Music allowing the transfer of the iTunes library).

Spotify's "Discover Weekly" – who said algorithm driven playlists can't read your mind?

"Discover Weekly" defined… It is a Spotify feature that generates a personalized 30-song playlist for each of the more than 100 mn users every Monday based on their listening habits and other playlists using algorithms.

First steps… Spotify introduced the "Discover Weekly" playlists in July 2015. The idea behind it came from the team that was working on Spotify's Discover page that did not take off with consumers. Once powered with – at that time – an algorithm prototype aimed at putting recommendations in a playlist, it gave birth to the "Discover Weekly" feature.

Becoming a major success… The personalization and curation capabilities have been a major success with consumers as witnessed by Spotify's search for feedback on Twitter: "At this point @Spotify's Discover Weekly knows me so well that if it proposed I'd say yes". Because of high demand, Spotify even suffered a service outage in September 2015. As of August 2016, the playlists are listened to by more than 40 mn people with more than 6-7 bn tracks having been streamed (AdWeek, August 28, 2016). In May 2016, Spotify reported that more than half of Discover Weekly's listeners streamed at least 10 tracks from their personalized playlist, while more than half of listeners came back again the following week.

A competitive advantage… We argue that as major streaming services have similar catalogues, knowing the customer base and offering them the most convenient service becomes a source of differentiation. This gives Spotify an advantage over the services that are still to launch in our view.

5) Scale will become more important. The streaming industry has relatively high barriers to entry given the need to meet rights holders' minimum revenue requirements and secure a broad catalogue based on multi-year agreements with labels. A new streaming service has to sign 30 different licensing deals in order to launch on a pan-European basis for instance.

We identify two key risks however for streaming players (for further detail, see second of the double album: "Paint It Black"):

- **The growth potential of the streaming market and the strategic importance of such services (interactions with users) attract a plethora of players, which will likely lead to intense competitive pressure.** Among the main risks for streaming services (and ultimately for rights owners) is the pursuit of greater differentiation through exclusivity and windowing to the detriment of the user experience. A recent move from leading label UMG, which reportedly ordered its labels to ban any exclusives with streaming services, could help curb the growth of this practice in the industry. Another source of disruption could come from tech giants (Google or Amazon) who are ruled by a different set of economics and can use music as a loss-leader. Apple's recent proposal to the CRB to shift to a statutory rate of $0.091 per 100 streams for songwriting royalties applicable to all interactive streaming services in the US (except Apple which has a direct deal with publishers) seems to be intended as a competitive move against pure streaming players. That said, **we believe labels will be careful to keep a minimum level of competitive tension among the distributors** and therefore ensure the economics work for pure streaming players. We note that the major labels also own stakes in the major streaming services such as Spotify (UMG, Warner, Sony) and Deezer (Warner).
- **With no interactive streaming service currently being profitable, the economic viability of such business models is yet to be proven**. Internet radio or online streaming platforms are still trying to find the right balance between freemium and subscription revenues to fund growing royalty payments and, in the case of interactive services, minimum guarantees. Recent developments point to a greater emphasis on the paid model given growing complaints from artists about the free window – cf. Taylor Swift's decision to remove her entire back catalogue from Spotify in 2014. Most new services now only offer a paid tier such as Apple Music and Deezer in the US, with Pandora set to launch its on-demand service later this year and Amazon reportedly doing the same. Spotify is also said to be introducing its premium-only music windowing later this year (MBW, September 5, 2016).

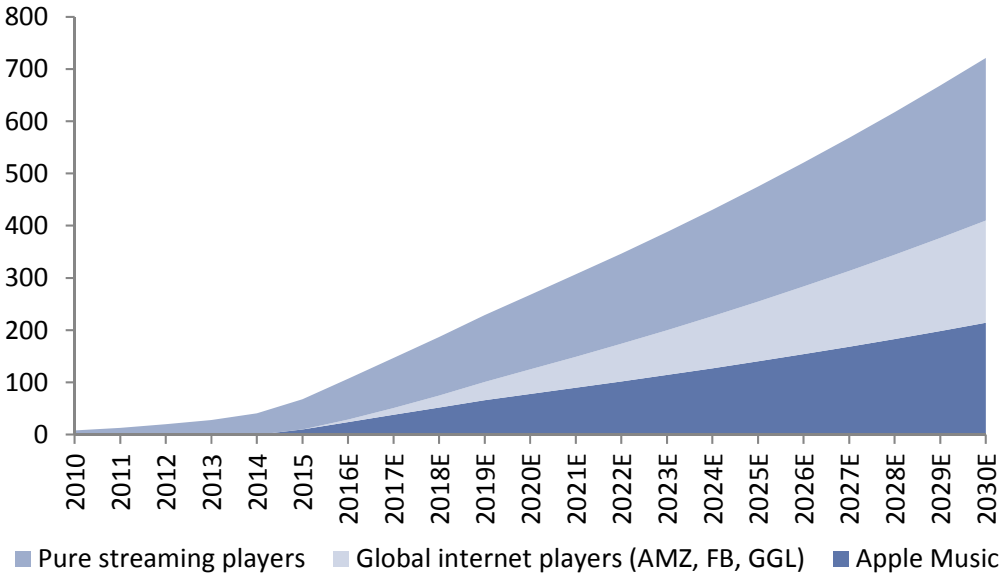
  Streaming services currently redirect around 70% of their revenues to rights owners (70% for Spotify; 71.5% for Apple Music in the US/73% outside of the US according to Recode), and we estimate they have to incur another 10%-15% of costs of goods sold. Producing original videos and other content, pursuing new revenue streams such as ticketing (Spotify recently partnered with Songkick and Pandora acquired Ticketfly), seeking partnerships with telecom operators (to lower customer acquisition cost) and the ongoing improvement in paid user conversion rates could help improve their profitability. Encouragingly, Deezer reported that it generated a 13% EBITDA margin in France in 1H15, its most mature market. Spotify's UK accounts showed that it generated a 16% operating profit margin in 2013 which however fell to 2% in 2014 owing to higher cost of sales and administrative expenses.

Over time, we expect to see more consolidation in the space. A few streaming services have already been discontinued (Rdio, Beatport, Zune, etc.). Apple has been reported to be interested in acquiring Tidal (Wall Street Journal, June 30, 2016). Sirius XM's owner Liberty Media was recently reported to have made an offer to buy Pandora which the latter rejected (Wall Street Journal, July 21, 2016).

As a result of these conflicting trends, **we believe streaming platforms' distributor cut will remain at around 30%**. This would leave them with a revenue pool of $11 bn in 2030E,

from $1 bn in 2015, and a profit pool of $1-1.5 bn based on long-term operating margins of 10%-15%. We expect the large tech entrants (Google, Amazon, BAT, etc.) to increase their market share of net adds to 30% by 2020 (from nil in 2015), meaning pure-play services (Spotify, Deezer, Pandora, etc.) will decrease from 63% in 2015 to 40% and Apple Music from 37% to 30%.

Exhibit 109: Future subscriber growth to be divided among three major groups of streaming players
Number of subscribers (mn)



Source: Goldman Sachs Global Investment Research.

An interview on music streaming with…

Dr. Hans-Holger Albrecht, CEO of Deezer

Dr. Hans-Holger Albrecht is the CEO of Deezer and a member of the company's board of directors. Prior to assuming his current role in February 2015, Albrecht served as president and CEO of media groups Millicom and Modern Times Group.

Deezer was one of the first streaming services to be launched in 2007. A number of new streaming services have launched since. Is there room for everyone? How can you differentiate yourself?
There is no one single streaming model fitting all countries in the world. We are just in the early days of streaming growth with global penetration being only 3%-4% in mature markets with plenty of opportunity for players to define their niche. In 2015, there were 68 mn streaming subscribers worldwide – which give a much lower penetration of the population. The biggest challenge for the new entrants is to build a compelling product – some of the incumbents, including Deezer, have spent years in acquiring content, building a multi-local product (languages, currencies, etc.) and developing the algorithms and data analytics that are hard to replicate – it takes time and significant funding. We also differentiate ourselves through the Flow product that creates an individually personalised listening experience the moment you press the button. It is much more responsive than a playlist that is updated every week. Another differentiation point lies in our go to market strategy – we have cultivated a partnership model that helped us build a strong position in Europe and expand in emerging markets.

Regarding your go to market strategy, you've been more reliant on telecom partnerships than others; do you still think this is the best strategy?
It really depends on the cycle of the market you are entering. It certainly has its limits, but it has proven to be the best strategy so far in entering emerging markets, but not only. It's a great way to scale quickly in a very cost efficient manner as you can leverage telecom operators' brand and marketing capabilities. However, we do realise the importance of direct customer acquisition and that is why we have gradually shifted our model from 80% of revenues being telco partnership driven five years ago, to less than 50% currently.

How do you view the competition from the larger internet players and what's the role of labels in ensuring competition is balanced?
Take Apple for example, it has around 20% of the global smartphone market, meaning there are still 80% of people who do not use Apple devices, creating room for other players and strategies to succeed as well. It is not easy to compete against the likes of Amazon, Google, Apple, but there are alternative strategies and competitive advantages you can rely on. Regarding the role of labels, I think they learned from their experience of iTunes that dominated 80% of the download market. Their role is to make sure that music has its price while maintaining some competitive pressure in the market.

Is there anything that a label does today that a streaming service can do better?
Labels' core competencies are around research and development, promotion and talent funding. I think streaming services will be able to take over the promotion capability from radio over time. On the funding side, there are artists that want and can do it on their own. But that doesn't mean we are competing against labels at this stage, it is more of a partnership and we are exploring opportunities together.

What do you think of exclusivity and windowing? Is it something you might be tempted to explore as well?
We could do that if we wanted to, but we see it as a major risk to the industry as a whole. The biggest competitor we have is piracy still – the moment we make the experience more complicated, the consumer will shift back to piracy. Look at what happened with Frank Ocean's exclusive that was illegally downloaded 750k times in a week and that probably meant a lot of money was lost. It is very naïve to think that people will go to different streaming services for different artists. Windowing, on the other hand, is interesting, but unlike sports events, it is really difficult to drive conversion from windowing while piracy remains a risk. Consumers join Deezer for the convenience and the music experience. Exclusivity and windowing risk destroying the model.

There are a lot of complaints from artists and labels against streaming services' free tier. Do you believe there is a future for freemium?
As long as the freemium model demonstrates that it converts people to pay, I do think there is a way forward. I also think that if artists complain about not being paid enough by the freemium tier they should be at least twice as angry against YouTube that directly competes against the free tier. YouTube has around 900 mn users and pays only 30% of the fees paid by subscription streaming companies to the labels and generates 20 times lower revenue per user. There is a huge value gap in that respect and labels will have to do something about it.

Will we see a streaming-only future and when? What level of paid penetration do you think we could get to?
I can't see any reason why other markets wouldn't get to Sweden or Norway's level of paid streaming penetration at around 25% of total population over time. Factors that can affect that trajectory are consumer behaviour around music – look at the Germans that are shifting to streaming very slowly or Japan that has a peculiar way of bundling CDs – and also further integration of streaming services (in cars, at home, etc.). Consumer education will play an important role as people are used to having music for free and a lot of them still like the ownership model. We have to explain to them the value proposition and the fact that we are not simply replacing download with streaming but rather offer them a completely new experience. Another factor will be the level of market development – emerging markets will shift to streaming right away for example. I think the potential is there, it is more a question of how fast we'll get there and what will be the trigger to accelerating growth.

How does Deezer pay labels/songwriters?
A couple of years ago we paid over 90% our revenues to labels and that has come down to 75%. We are negotiating with labels on a daily basis and the rates tend to come down over time, but the absolute amount is going up, so it is a win-win situation. One of the reasons why the royalties are coming down is because we can provide labels with data around the end customer.

None of the streaming services are currently profitable – what's your breakeven horizon and where do you think you can get to in terms of margins?
The business model is driven by three cost components: royalty payments to rights owners that are structurally coming down; product development and overhead costs that are currently high because we are in a start-up mode but will come down as percentage of sales as we gain scale; and finally marketing costs that are at our discretion. I'm not concerned about profitability as such as it would mean we miss out growth opportunities. The question is more what sort of operating margins we believe the industry will have and that's a wide range from single digit up to 20%.

Streaming services, labels, artists: how do you see the balance of power evolve in the future?
I wouldn't say it is all about a power shift, but rather about the opportunities we have by bringing more transparency to artists and more convenience to customers. Currently, c.90% of music industry revenues are coming from six or seven markets. And all of a sudden, we can build a model that brings double digit millions revenue from Colombia for example. Deezer is in a favourable position as it has the relationship with the end consumer and the data around it. That is why the labels have invested in us, they have to adapt and I can say they have been doing ok so far.

What do you think of the ad revenue opportunity in streaming given how large the radio market is?
When you consider that half of the usage on Deezer is a radio-like experience, i.e., in lean back mode, it gives you an idea of the impact it can have on radio. It is definitely an opportunity for streaming services to tap into the radio advertising market. It is difficult to say at this stage whether this will be done through acquisitions or organically, but the opportunity is definitely there.

What do you think of the current promotional activity in the market and how sustainable is the $9.99 price?
Promotion is a tactical thing that you do in every subscription model as you try to get the customer over the finish line. They are normally locked in for three months or so and that's fine. The 9.99 is a given price by the label, but to be fair, if you look around the world we have more pricing points already – we have the family packages where you can sign up to six people for 14.99, we have different pricing points in the emerging markets, with the telco partnerships sometimes – so the 9.99 is not set in stone and we all adapt. I think the key point is that music is not cheap. With most of our costs being variable, if the price point goes down or royalties go down our margin as a percentage of revenues does not change.

You mentioned data analytics being a key differentiator for Deezer. Can you elaborate on that?
Today we collect around 10 bn customer data points every month and we have been using data for the past 10 years. This gives us a deep understanding of the individual customers in terms of what they listen to, where, how, their music tastes, etc. It then helps us build the consumer experience – we bring the over 40 mn tracks into personalised playlists or adapt it to the consumer's own music consumption style. I think people underestimate how difficult it is to launch a new streaming service, that will have to build the data analytics from scratch. Through our partnership with the labels, for the first time they have access to that data. Once you know the customer, you can build adjacent revenue streams such as ticketing for example. But we have to be careful not to ruin the experience.

Ad funded streaming to eat into terrestrial radio

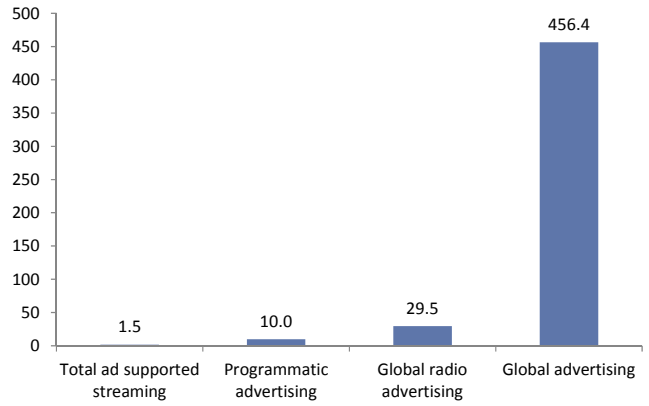
We believe ad-funded streaming (on YouTube, Pandora, Spotify, etc.) will become increasingly relevant and appealing for advertisers given the exponential growth in online audio and video consumption especially on mobile devices, the ability to better target and interact with consumers, and the opportunity to do so by leveraging programmatic advertising technologies.

We estimate the current ad funded market to be worth $1.5 bn globally and expect this to rise to $7 bn in 2030 – this includes revenues from purely ad funded websites (YouTube, etc.), advertising revenues from freemium services (Spotify, Deezer, etc.) and advertising revenues from digital radio services (Pandora, etc.). Note that these three items are reported under different definitions in the IFPI data (IFPI's ad funded revenues only refer to websites such as YouTube, freemium revenues are included in paid streaming and online radio in other digital revenue). We see a huge addressable market with the global advertising market worth $456 bn, global radio market $30 bn and programmatic advertising $10 bn in 2015 (MAGNA Global).

In the US, we see online radio as a substitute for terrestrial radio services and this shift is particularly positive for labels and artists who currently do not get paid performance royalties from analogue radio. Consumption of radio under its analogue form remains dominant at 54% (4Q2015, Edison Research) but is decreasing: the US Radio Advertising Bureau reported that average listening hours has decreased from 20 hours a week in 2007 to nearly 14 hours a week. A survey from Edison Research shows that nearly half of digital radio listeners are using those services as a replacement for AM/FM.

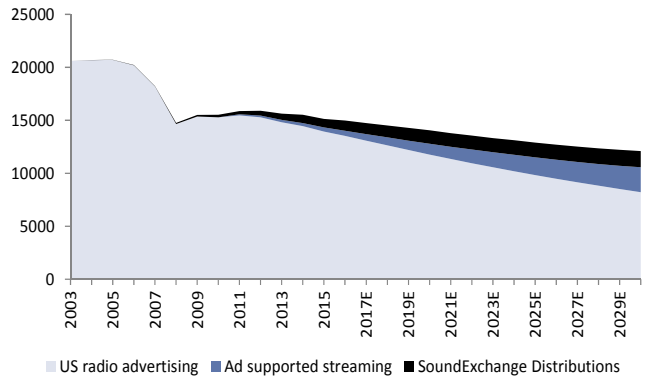
The US ad-funded streaming market was worth $385 mn and digital radio around $803 mn in 2015 as per RIAA data and we believe this has the potential to rise to $2.3 bn and $1.5 bn respectively by 2030. This compares to a radio market worth $14 bn in 2015 (MAGNA Global). With half of terrestrial radio consumption still happening in the car in the US, we believe the replacement with newer cars with more advanced dashboards, that are compatible with smartphones or have internet connectivity, will drive greater shifts towards streaming services.

Exhibit 110: The global addressable market for advertising-funded streaming is huge
Advertising spend by category, $ bn



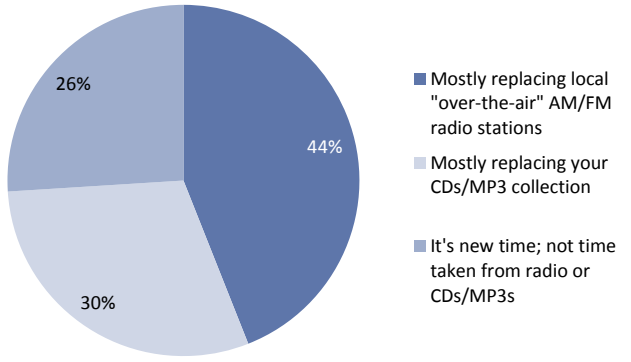
Source: MAGNA Global, IFPI.

Exhibit 111: We expect digital radio and streaming services to eat into the terrestrial radio ad market in the US
Advertising spend by category, $ mn



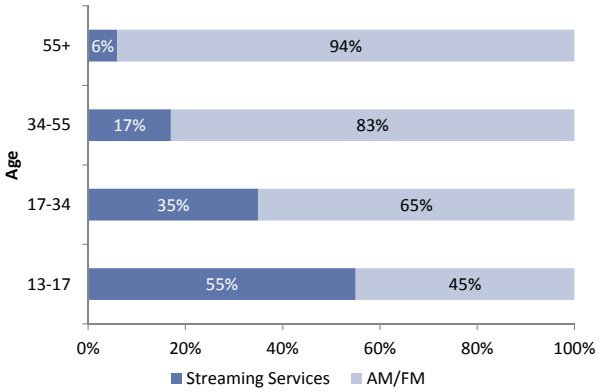
Source: MAGNA Global, IFPI, Goldman Sachs Global Investment Research.

Exhibit 112: 44% of digital radio listening is replacing analogue
Daily listening to streaming service vs. AM/FM by age group, US, 2014



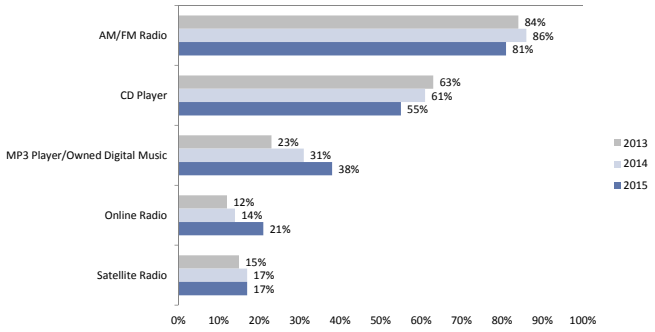
Source: Edison Research Streaming Audio Task Force, Summer 2013/ IAB.

Exhibit 113: Young listeners spend more time listening through streaming, although AM/FM radio remains the largest overall
Daily listening to streaming service vs. AM/FM by age group, US, 2014



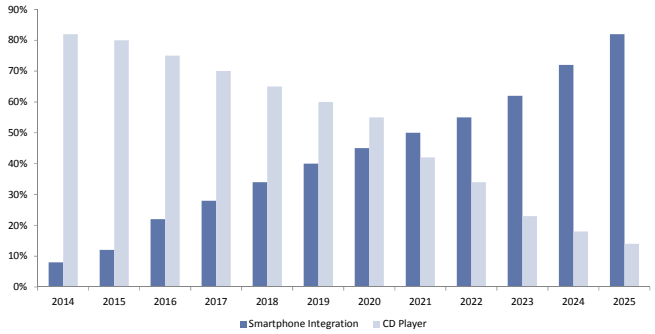
Source: Activate.

Exhibit 114: AM/FM remains dominant in the car, but decreasing
% currently using medium in primary car



Source: Edison Research, Triton Digital, Gartner.

Exhibit 115: Penetration of connected cars is rising and expected to reach 80% in 10 years' time
% of new cars sold with CD players and smartphone integration in Europe



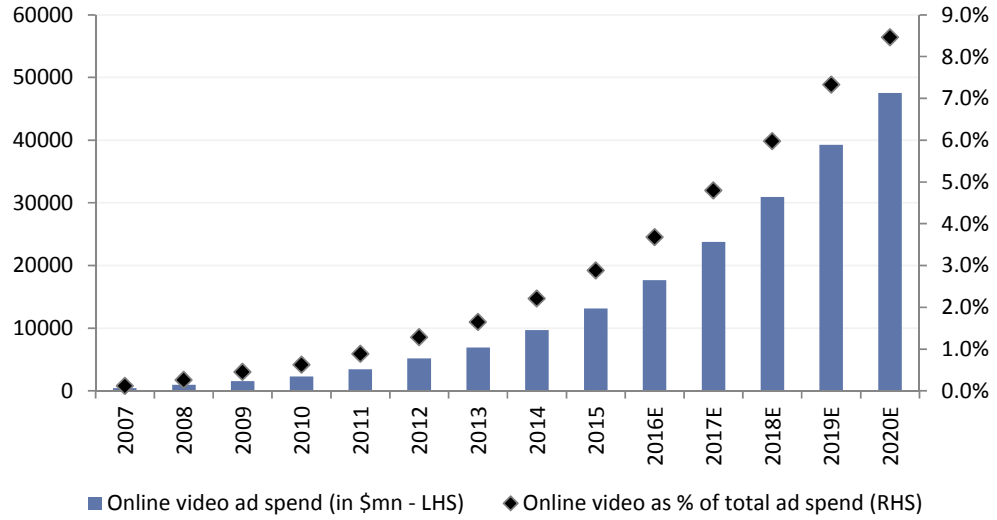
Source: BPI.

Purely ad-funded services (mainly YouTube) have plenty of growth opportunity ahead, but face greater pressure to improve monetisation for rights holders

The pure ad-funded landscape is currently dominated by YouTube which accounts for c.90% of users according to IFPI. **We see room for YouTube's revenue from music to grow as:**

1. Online video is still c.3% of overall ad spend globally but has been the main driver of online advertising growth (together with social media), growing at a CAGR of 42% over the past five years (as per MAGNA Global). We expect this strong growth to continue; MAGNA Global forecasts a 2015-29 CAGR of 29%. We believe this will continue to be funded by a shift in advertising budgets from other digital formats such as display and also TV.

Exhibit 116: Online video advertising is to reach 8.5% of overall ad spend by 2020E
Global online video ad spend

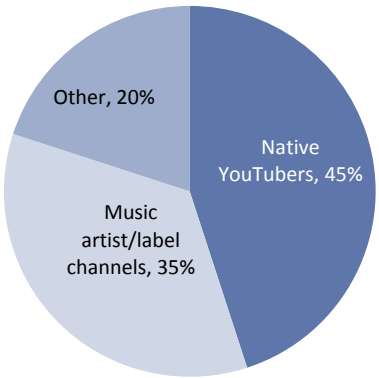


Source: MAGNA Global, Goldman Sachs Global Investment Research.

2. YouTube is particularly well placed to benefit as we estimate the platform accounted for c.40% of the online video market in 2015. We estimate that YouTube revenues grew at a 50% CAGR over 2010-15 and forecast c.30% CAGR over 2015-18, driven by further growth in YouTube consumption and improved monetization as more innovative ad formats are introduced.

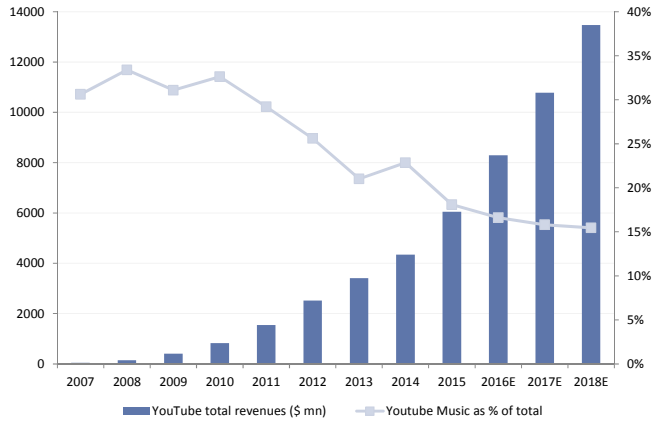
3. We see music as an important driver of traffic – around 35% of YouTube viewing is on music artist/label channels, second only after channels of YouTube natives according to FT. IFPI also found that 82% of YouTube users access music content through the service in the top 13 music markets. We calculate that music accounted for around 18% of YouTube revenues in 2015, based on the global ad-funded streaming revenue reported by IFPI and YouTube's 45% cut (according to MBW), and forecast that share to reduce slightly to 15% of YouTube revenue in 2018.

Exhibit 117: 35% of video views on YouTube are on music artist/label channels
YouTube most viewed channels for last 90 days, Dec 2015



Source: FT.

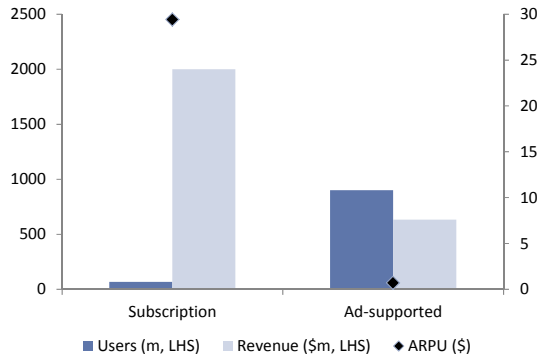
Exhibit 118: We expect YouTube revenues to reach almost $14 bn in 2018E with c.15% coming from music
YouTube revenues, 2007-18E



Source: Company data, Goldman Sachs Global Investment Research.

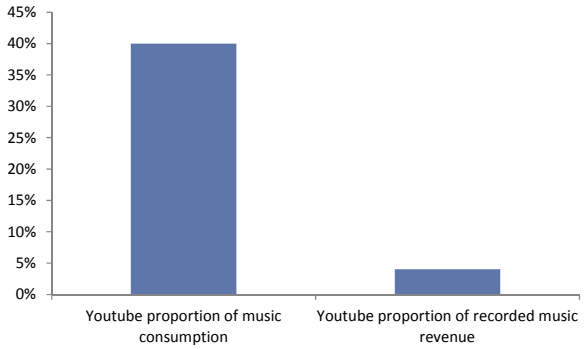
We believe however that YouTube will face ever growing pressure from regulators and content owners to improve the monetization of its videos and redistribute a greater share of its gross revenues. The outcome of the US review of safe harbour rules and implications of the recent EU Copyright proposal will be important in addressing the perceived value gap between the usage and monetization of music on platforms such as YouTube (see section *Future regulatory change could present upside for rights holders*).

Exhibit 119: There are 13x more ad-funded users (of which 90% is YouTube) than paid users, yet ad-funded generate 3x less revenue



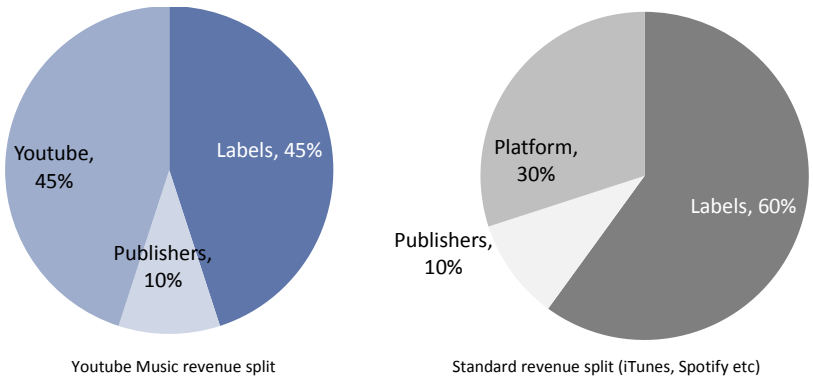
Source: IFPI.

Exhibit 120: YouTube accounts for 40% of music listening but 4% of recorded music revenue
Total streams by service, 1Q-2Q, 2014 vs. 2015 (bn)



Source: Apple, IFPI.

Exhibit 121: YouTube's distributor cut is 45% compared to 30% for music platforms
Estimated split of YouTube vs. industry standard music royalties



Source: Music Business Worldwide, Press reports, Goldman Sachs Global Investment Research.

VEVO aims to become less reliant on YouTube

VEVO is the leading music channel on YouTube, with more than 18 bn of music video views per month and 850 mn hours of viewed content, of which 60% from mobile. VEVO also claimed 17 of the top 23 YouTube videos with more than 1 bn views to date (April 2016). Recent press reports suggest that VEVO aims to reduce its dependence on YouTube following the re-launch of its app and website and ahead of the launch of a paid subscription service by the end of the year (FT, August 19, 2016). VEVO's CEO, Erik Huggers, stated that he wanted to position VEVO more as a specialty record store as opposed to YouTube that is more of a "one size fits all" model, while recognizing that there is room for both services to grow and that YouTube will remain an important partner (FT, August 2016). We note that VEVO has just signed a distribution deal to include for the first time WMG videos on its apps and website but not on its YouTube pages. VEVO is currently owned by SME and UMG (40% stake each) with Abu Dhabi Media and Alphabet also owning small stakes.

Pandora

In the US, Pandora has rapidly grown to 78 mn active users of which 4 mn are paid subscribers, and we forecast total active users to grow to 90 mn by 2020, a 2% CAGR. Pandora reported 10.1% share of total US radio listener hours in 2Q16, which we forecast to grow to 12.4% by 2020. We believe that the leverage in Pandora's model lies in the company's ability to shift its advertising from national and remnant to a majority local mix, similar to the majority local mix of terrestrial radio. Local is the fastest growing part of Pandora's advertising revenue, accounting for 28% of ad revenue in 2Q16 (up from 20% just two years prior), while local commands eCPMs that are 2.5-3x greater than national ads. BIA/Kelsey forecasts location targeted mobile ad spend to grow from $9.8 bn last year to $29.5 bn in 2020, though that figure does include some national brand advertising.

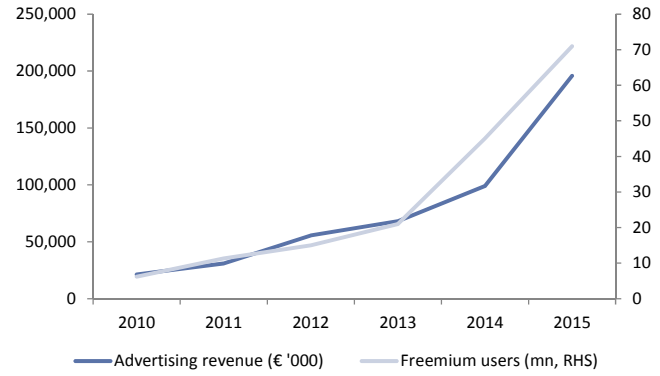
While local sales dollars are more expensive to acquire as they take more investment in both people and time, the leverage they generate from superior pricing more than makes up for the increased cost of sales on that revenue. Importantly, driving incremental local ad sales is more accretive to Pandora's bottom line than selling more national ads. Pandora believes the combination of local audience reach, local ad sales teams, and technology integration has resulted in increased momentum in local advertising revenue. Pandora currently has local sales teams in 39 markets. The company noted in 2Q16 that 154 of its 508 sales reps were specifically focused on local markets.

Pandora also intends to use its ad-supported service as a user acquisition channel for its proposed on-demand offering, which we believe creates a competitive advantage as its free, ad-supported product has shown the potential to be profitable (positive GAAP EBITDA in 3Q14 and 4Q15, and positive operating cash flow in 2014). Customer acquisition costs have generated large upfront losses for online streaming competitors, and being able to offset those costs with a potentially profitable user acquisition channel creates a unique advantage for Pandora, in our view. We also see potential for Pandora to move more local sales to a lower-cost self-service model over time, which would further increase profit potential for that product.

Spotify

Spotify's advertising revenues grew strongly from €21 mn in 2010 to €196 mn in 2015 (98% growth in 2015 alone) while freemium users grew from 6 mn at end-2010 to 71 mn at end-2015 (MBW); this implies average revenue per ad funded user of €3.6 throughout the period. Going forward, Spotify sees programmatic as a key growth driver for the ad-supported business and aims to open up all its audio inventory to programmatic within the next five years (Adage interview). Spotify introduced its programmatic offering in November 2015 and opened up its audio ad inventory for programmatic media buyers by signing a deal with Rubicon Project, App Nexus and the Trade Desk in July 2016. This enables Spotify to sell its ad inventory in near real time through private digital exchanges and in a highly targeted way, based on devices and demographics but also first-party playlist data that reflect the person's interests. Moreover, Spotify's ads are 100% viewable as they are shown in-app and only when the user is active. Spotify counted 70 mn ad-supported listeners globally in 2015 and reported that around 70% of streams were mobile.

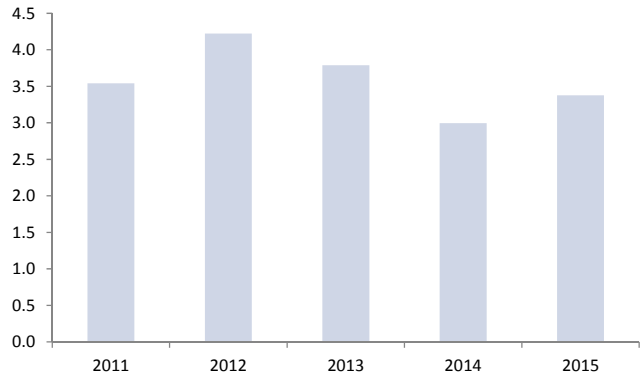
Exhibit 122: Spotify's advertising revenue has increased in line with the number of freemium users



Source: Spotify.

Exhibit 123: Spotify's ad revenue per user has hardly moved over the last five years

Spotify advertising revenues per free user (€)



Source: Spotify.

Sync revenues: An additional growth opportunity for rights holders

Synchronisation revenues refer to flat fees or royalties generated by the use of sound recordings in TV, films, games and advertising as background sound.

Sync remains small at $360 mn or 2% of the global recorded music industry in 2015 (IFPI) but it is a growing source of recurring revenues for which we forecast a 2015-30 CAGR of c.4% after 7% over 2013-15, driven by a rising consumption of content – be it TV, films, adverts or games, especially in markets outside of the US. The US is the largest sync market accounting for 57% of the total in 2015, far ahead of the UK at 9% and France at 8%.

Not only is this becoming a more important source of revenue for rights holders, but it is also becoming a more important source of discoverability of artists with 26% of people discovering artists through sync according to a 2015 Ipsos study conducted across 13 major music markets.

We see Vivendi and Sony as well positioned to leverage their other media assets to increase sync revenues and turn artists into brands such as: TV/movies (StudioCanal, Sony Pictures), video games (Gameloft, Playstation), online video (Dailymotion, VEVO) or advertising (through the partnership with Vivendi' sister company Havas). We believe this will improve relationship with artists and strengthen their competitive advantage over time.

Vivendi: Exploiting synergies across its asset portfolio to boost sync revenue

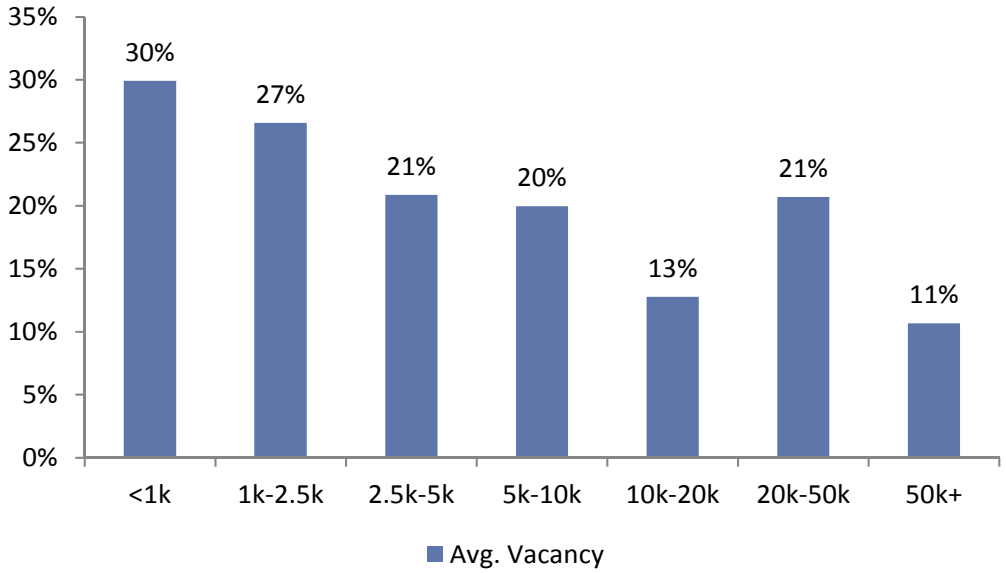
- **TV production**: Vivendi has identified c.40 potential collaborations between UMG and StudioCanal such as documentaries, musical movies and biopics. The film "Legend", for example, was the best British box-office launch ever posted by StudioCanal whose soundtrack was produced by one of UMG's artists – Duffy. Vivendi's Studio+ will produce digital mini-series for mobile in cooperation with both UMG and StudioCanal. UMG CEO and Chairman, Lucian Grainge, was appointed on the board of Lionsgate (September 14, 2016) and was reported to have strengthened the relationship between UMG and other US entertainment companies in recent years.
- **Video games**: UMG music can be used in Vivendi's gaming assets (Gameloft, potentially Ubisoft) as soundtracks.
- **Online video**: Dailymotion and VEVO (of which Vivendi owns 40%) are among the most viewed online video platforms globally with 3.5 bn and 18 bn monthly video views and can therefore improve the visibility of UMG's artists and the monetisation of its music videos.
- **Advertising**: Vivendi's sister company Havas and UMG announced the formation of the Global Music Data Alliance (GMDA) in January 2015 in order to leverage UMG's proprietary data across multiple artists and genres by combining it with Havas' analytical capabilities to reach a holistic view of music consumption across a range of platforms. This can help provide new revenue opportunities for UMG artists and labels by creating marketing opportunities for brands. Examples of potential opportunities include driving sponsorship for live events or album tie-in promotions. There is also scope for advertisers to utilise a particular artist or tune for a campaign based on data about consumer preferences. UMG added another layer to its relationship with Havas in September 2015 by teaming up with BETC (owned by Havas) to launch a jointly-run record label called POP Records since September 2015 with an aim to launch new artists and use BETC's pop culture expertise to create content for artists.
- ***Touring:*** *Vivendi can also leverage its ticketing businesses (Digitick, See Tickets) and concert halls (Olympia) to promote artists and boost performance income*

Live entertainment will become more important and a growth opportunity for streaming platforms

Unlike recorded music, live music has been relatively immune to the online transition and resulting piracy over the past decade. With recorded music sales declining, artists also became more dependent on live music performance which in turn led record companies to expand into that segment. Live music has indeed been the fastest growing area of the music industry worth another $25 bn of revenue in 2015 according to IFPI.

We forecast $14 bn of additional revenue opportunity by 2030 as the segment will benefit from favourable demographic shifts (greater preference for experiences among Millennials and Gen Z) and optimization of vacancy rates enabled by new technologies and data. Streaming services are particularly well placed to leverage listening data for the marketing and promotion of live events and the possibility to connect directly with fans. It is estimated that 40%-50% of tickets are currently unsold in the US (Billboard, September 4, 2010). According to our analysis of over 5,000 live events in the United States (data from global concert industry trade publication, Pollstar), average vacancy was 26%, with venues with fewer than 1k seats seeing vacancy rates of 30%. This explains the move of various music players such as Pandora, Vivendi (owner of UMG) and Access Industries (owner of WMG) to acquire ticketing companies.

Exhibit 124: Vacancy rates have tended to be higher for shows at smaller venues, typically featuring lesser-known artists with smaller promotion budgets
Average vacancy rate, by venue size (maximum seat capacity)



Source: Pollstar.

Pandora's October 2015 acquisition of Ticketfly should enable it to leverage its user data, especially listening history and location data, to drive down vacancy rates at some venues. One key driver of high vacancy rates is a lack of awareness of smaller acts which do not have national marketing campaigns. Many of the largest venues in the United States (stadiums, arenas, etc.) are booked in partnership with LiveNation for ticketing and promotion. Pandora has noted that its target market for Ticketfly is outside of those mega venues, and more focused on Tier 2 events. Pandora has deep insight into its users' listening habits and artist preferences – the company knows where its users live and which artists they like based on station creation and thumb data (which songs a user has "thumbed up" or "thumbed down"). Given this data, Pandora believes it can help drive awareness of local events among known fans of a given artist, and more effectively fill venues. Better matching the supply and demand could save up to $2 bn of revenues for the US live industry alone assuming 24 mn tickets are unsold every year in the US at an average price of $67.33.

Stock implications

Vivendi (CL-Buy)
We see Vivendi as a main beneficiary of the recovery in the music industry through UMG, the world's largest record company and second largest music publisher. UMG accounted for 47% of 2015 group revenue and 63% of EBITA. We believe UMG will not only benefit from overall music market growth, especially in the recorded segment, but will also drive new revenue streams and synergies in synchronization and live though greater integration with Vivendi's other businesses and partners: leading online video services Dailymotion and VEVO, TV, video games, ticketing and telecom partnerships (Telefonica, Telecom Italia, Orange). UMG should also increasingly benefit from the marketing/branding/PR expertise brought from its partnership with Vivendi's sister company Havas, the world's sixth largest advertising agency.

We increase our UMG revenue by 3.2% and EBITA by 6.5% on average over 2016-2020E to reflect our new global industry forecasts. We now forecast revenue to grow 4.4% (2015-20E CAGR) and margins to expand to 15.2% in 2020 from 11.6% in 2015 thanks to streaming. This drives a 3% average increase in our Vivendi EPS forecasts over 2016-20. Our UMG DCF-based valuation increases by 5% to €13.1 bn leading us to raise Vivendi's 12-month SOTP-based target price to €21.5 from €21.1. We reiterate our Buy rating, and the stock remains on the Conviction List.

Sony (CL-Buy)
Music is the cornerstone in Sony's transition to becoming a global entertainment giant. We believe Sony is one of key beneficiaries of recovery in the music industry alongside Vivendi, and reiterate our Conviction List-Buy. Sony is the world's second largest record company and the largest music publisher. We estimate the music segment will account for 8% of group revenue and 23% of operating profits in FY16 (30% in FY2015). We believe Sony Music will benefit from two structural advantages which should enable it to outperform the overall music market: 1) large song catalogue, with Sony's main label Columbia Records founded in 1887, the oldest surviving record label in the world. The growth of streaming increases consumption and monetization of its catalogue. 2) Cross-media synchronization opportunity and improved discoverability, with Sony being a large media conglomerate with strong TV production activity in North America, unprofitable yet large-scale motion pictures studios and the world's most successful video game platform, PlayStation.

We raise our Sony estimates slightly (+1%) and build a more detailed growth outlook for the music business. We now assume a negative 10% CAGR (2015-20) for the physical recording business and assume a CAGR for the streaming business of +29% over the same period. We assume the recording business will grow at 7% in aggregate, with a 5% CAGR in music publishing. We also assume margins will improve as we believe digital has 7-10 pp higher operating profit margin vs. the physical business. We forecast Sony's music business operating profit margin to improve from 12.2% in FY16 to 15.7% by FY20.

Pandora (CL-Buy)
We believe Pandora's leadership in internet radio, combined with the data generated by its 100 mn+ quarterly logged-in users and nearly 6 bn hours of quarterly listening, provides a strong competitive platform, which we expect to continue taking share of listening hours from terrestrial radio in the US. Pandora has more than doubled its share of US radio listener hours from 4% in 2011 to 10% in 2015. Pandora's cost structure has also stabilized now that it has signed direct deals with all major record labels. Licensing cost for its ad-supported product will be in the region of $33 per thousand hours, modestly above the $31 it had been paying prior to the deals. With secular tailwinds from the proliferation of connected devices, including autos, mobile devices, and in-home entertainment, we expect Pandora to surpass 23 bn listener hours in 2017, excluding the potential impact of any on-

demand offering. We believe Pandora's move into interactive streaming will significantly expand its addressable market and monetisation of its listeners. Its unique database, long-standing brand and strong customer relationships put it in a favourable position to upsell its on-demand service to its c.80 mn ad-funded radio customers and better segment its customer base through multiple price points. We recently added Pandora to the Conviction List (see *Adding Pandora to CL ahead of subscription driven product cycle*, October 4, 2016)

Apple (Buy)
Apple is a leading provider of smartphones, tablets, and PCs with proprietary operating systems across mobile devices (iOS) and general purpose computers (Mac OS). Apple's platforms attract a robust user base with nearly 800 mn iTunes accounts, over 590mn iPhone users (GSe), and a Mac installed base of 80 mn. As we expect core device sales to slow, we believe Apple will increasingly focus on its services stream with the iTunes/Software/Services segment which we forecast to growth to $29.9 bn of revenue in FY18 (12.8% of revenue) from $19.9 bn of revenue in FY15 (8.5% of total). Within this, Apple should increasingly benefit from the growth of music streaming through its subscription service Apple Music which it can upsell to its large installed base of iPhones. We forecast Apple Music users as a percentage of iPhone users to increase from 2% in 2016E to 14% in 2030E. This implies that Apple will account for around 35% of global net subscriber additions over the next five years and 27% over 2020-30 (as more rival services launch). This gives revenue of US$1.2 bn in 2016E growing to US$13 bn in 2030. While Apple's iTunes remains a dominant player in the structurally declining downloads business, we expect the growth from streaming to more than offset the decline in downloads by 2017.

Alphabet (CL-Buy)
As the dominant online video platform for music, we view YouTube as particularly well positioned to benefit from the strong growth in music video consumption and online video advertising especially on mobile devices. We estimate the platform accounted for ~40% of the online video market in 2015. We estimate that YouTube revenues grew at a 50% CAGR over 2010-15 and forecast c.30% CAGR over 2015-18, with around 15%-20% coming from music. We believe however that YouTube will be under greater pressure to improve monetisation for rights holders amid greater regulatory scrutiny and as competition for online audiences intensifies. We estimate that YouTube accounted for 9% of Alphabet's revenue in 2015 and we forecast its share to rise to 12% by 2018.

iHeart (Not Covered)
While the overall US terrestrial radio industry is likely to lose share to digital alternatives and will need to adapt to change, we believe IHRT will continue to outperform peers by a healthy margin for years, given 1) it is the largest station and benefits from scale, particularly as it relates to national advertising, 2) it has a credible digital platform that others lack, which therefore allows it to recapture more of the terrestrial pie that is migrating to digital, and 3) it is the biggest player but is still c.20% of the industry at c.$3 bn in radio revenues vs. a $15 bn pie.

Sirius XM (Neutral)
Sirius XM (SIRI) is the leading subscription-based satellite radio broadcaster in the United States with over 30 mn paid subscribers. The company is best known for its curated commercial free music, live sports and talk radio content. We believe SIRI will continue to maintain its competitive advantage and market share in the in-car radio market given its (1) exclusive content portfolio (most notably major sports leagues and Howard Stern), (2) established distribution platform via +23k auto dealerships, and (3) ease of use via its driver friendly interface. SIRI is also making strides to participate in the connected car and streaming music universe via the upcoming launch of its "360L" platform. This platform looks to incorporate the economics of linear satellite distribution with interactive music streaming, customizable user interfaces and analytic abilities of two-way data networks.

We believe the launch of 360L will better position SIRI to compete with both IP radio and on-demand streamers while maintaining its industry leasing cost structure.

Our Neutral rating represents a balance of a few key factors. Key positives are (1) superior cost structure and margins when compared with streaming counterparts, (2) an expanding addressable market of Sirius-enabled vehicles within the used car market, and (2) growing FCF that we expect to fund material share repurchases over the next 3-6 years. These are balanced, in our view, by (1) potential moderation in new car sales (SIRI's key subscriber acquisition 'funnel'), (2) emerging competition as connected car sales ramp, and (3) valuation that continues to remain in-line with peers', even if we account for SIRI's strong FCF growth.

Exhibit 125: Summary of price target methodologies and risks

Company	Ticker	Rating	Price	12M Price target	Valuation methodology	Risks
Alphabet	GOOGL	* Buy	$ 800.4	930.0	Price target is derived from a three-way equal-weighted valuation approach, which includes a five-year traditional discounted cash flow (DCF) analysis, an EV/EBITDA multiple analysis, and a P/E analysis. - On EV/EBITDA, we use a multiple of 13x - On P/E, we use a multiple of 22x - DCF assumptions are a discount rate of 7% and a FCF perpetuity growth rate of 4%.	(-) Weaker-than-expected cost discipline, competition, dilutive M&A
Apple	AAPL	Buy	$ 112.5	124.0	Our 12-month price target is based on a 12.5X CY17 P/E	(-) Product cycle execution, end demand, and a slower pace of innovation
Pandora	P	* Buy	$ 14.2	19.0	12m price target is based on a 70% / 30% blend of 55x 2017E EV/EBITDA fundamental valuation and 3X 2017E EV/Sales M&A valuation	(-) Competition, content costs, failure to grow monetization/engagement.
Sirius XM	SIRI	Neutral	$ 4.2	4.5	12-month price target is based on a blend of three methods 1/2 FCF (15x), 1/4 EV/EBITDA (13x), and 1/4 DCF (7.9% WACC, 3.0% Term).	(+) Strong new car sales, higher uptake in the used car segment, increased share repurchases. (-) Competition from streaming services, loss of key content, weak auto sales.
Sony	6758.T	* Buy	¥ 3371.0	4400.0	Our 12m price target is based on a SOTP valuation	(-) Delays rebuilding the movie business, stronger yen, weak consumption.
Vivendi	VIV.PA	* Buy	€ 17.7	21.5	Our 12m price target is based on a SOTP valuation	(-) Lack of recovery in Music, worse trends at Canal+ France, M&A.

** Denotes Conviction List membership*

Source: Goldman Sachs Global Investment Research.

Appendix

Exhibit 126: Vivendi: changes to our estimates

€mn	New					Old					% change				
	2016E	2017E	2018E	2019E	2020E	2016E	2017E	2018E	2019E	2020E	2016E	2017E	2018E	2019E	2020E
Sales															
UMG	5,147	5,369	5,630	5,950	6,334	5,121	5,285	5,463	5,690	5,964	0.5%	1.6%	3.1%	4.6%	6.2%
Canal +	5,371	5,413	5,541	5,682	5,836	5,371	5,413	5,541	5,682	5,836	0.0%	0.0%	0.0%	0.0%	0.0%
Vivendi Village	349	529	582	640	704	349	529	582	640	704	0.0%	0.0%	0.0%	0.0%	0.0%
Others	(22)	(20)	(20)	(20)	(20)	(22)	(20)	(20)	(20)	(20)	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**10,844**	**11,292**	**11,734**	**12,253**	**12,854**	**10,819**	**11,208**	**11,567**	**11,992**	**12,484**	**0.2%**	**0.8%**	**1.4%**	**2.2%**	**3.0%**
EBITA															
UMG	643	725	800	881	963	640	713	754	797	847	0.5%	1.6%	6.0%	10.6%	13.7%
Canal +	375	530	668	743	768	375	530	668	743	768	0.0%	0.0%	0.0%	0.0%	0.0%
Vivendi Village + new initiatives	(50)	(20)	-	5	10	(50)	(20)	-	5	10	0.0%	0.0%	0.0%	0.0%	0.0%
Holding & Corporate	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**874**	**1,140**	**1,373**	**1,534**	**1,646**	**871**	**1,129**	**1,327**	**1,450**	**1,530**	**0.4%**	**1.0%**	**3.4%**	**5.8%**	**7.6%**
% margin	8.1%	10.1%	11.7%	12.5%	12.8%	8.0%	10.1%	11.5%	12.1%	12.3%					
Income from Operations															
UMG	683	760	835	916	998	685	723	764	807	857	-0.3%	5.0%	9.2%	13.5%	16.4%
Canal +	398	533	671	746	771	398	533	671	746	771	0.0%	0.0%	0.0%	0.0%	0.0%
Vivendi Village + new initiatives	(50)	(20)	-	5	10	(50)	(20)	-	5	10	0.0%	0.0%	0.0%	0.0%	0.0%
Holding & Corporate	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	(95)	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**937**	**1,178**	**1,411**	**1,572**	**1,684**	**939**	**1,142**	**1,340**	**1,463**	**1,543**	**-0.2%**	**3.2%**	**5.3%**	**7.5%**	**9.1%**
Associates	128	174	201	201	201	128	174	201	201	201	0.0%	0.0%	0.0%	0.0%	0.0%
Net Interest	(42)	(30)	(35)	(35)	(35)	(42)	(30)	(35)	(35)	(35)	0.0%	0.0%	0.0%	0.0%	0.0%
Income from investments	38	38	38	41	44	38	38	38	41	44	0.0%	0.0%	0.0%	0.0%	0.0%
Tax	(259)	(314)	(373)	(416)	(445)	(258)	(311)	(361)	(394)	(415)	0.3%	1.0%	3.3%	5.6%	7.3%
Minorities	(30)	(32)	(34)	(36)	(38)	(30)	(32)	(34)	(36)	(38)	0.0%	0.0%	0.0%	0.0%	0.0%
Adjusted Net Income (continued)	**709**	**977**	**1,170**	**1,290**	**1,372**	**707**	**969**	**1,136**	**1,228**	**1,287**	**0.3%**	**0.9%**	**3.0%**	**5.1%**	**6.7%**
Adjusted EPS (continued)	**0.56**	**0.77**	**0.92**	**1.01**	**1.08**	**0.56**	**0.76**	**0.89**	**0.96**	**1.01**	**0.3%**	**0.9%**	**3.0%**	**5.1%**	**6.7%**

Source: Goldman Sachs Global Investment Research.

Exhibit 127: Sony: changes to our estimates

JPY, mn	New					Old					% change				
	2016E	2017E	2018E	2019E	2020E	2016E	2017E	2018E	2019E	2020E	2016E	2017E	2018E	2019E	2020E
Revenue	7,823,182	8,199,058	8,471,616	8,705,913	8,978,869	7,821,132	8,182,528	8,435,524	8,654,208	8,905,035	0.03%	0.20%	0.43%	0.60%	0.83%
EBITDA	758,709	952,082	1,018,089	1,065,030	1,144,981	758,554	950,473	1,018,924	1,061,638	1,139,750	0.02%	0.17%	-0.08%	0.32%	0.46%
Operating profit	338,114	527,487	591,244	665,435	759,386	337,959	525,878	592,079	662,043	754,155	0.05%	0.31%	-0.14%	0.51%	0.69%
Net Income	119,087	308,904	344,309	407,551	476,576	119,009	308,100	344,726	405,685	473,698	0.07%	0.26%	-0.12%	0.46%	0.61%
EPS (¥)	94	245	273	323	378	94	244	273	322	375	0.07%	0.26%	-0.12%	0.46%	0.61%
BPS (¥)	2,003	2,198	2,421	2,694	3,022	2,003	2,197	2,420	2,692	3,017	0.00%	0.03%	0.02%	0.07%	0.14%

Source: Goldman Sachs Global Investment Research.

Disclosure Appendix

Reg AC

We, Lisa Yang, Heath P. Terry, CFA, Masaru Sugiyama, Simona Jankowski, CFA, Heather Bellini, CFA, Robert D. Boroujerdi, Piyush Mubayi, Brett Feldman, Drew Borst, Mark Grant, Otilia Bologan, Stephen Laszczyk, Yusuke Noguchi and Matthew Cabral, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

Investment Profile

The Goldman Sachs Investment Profile provides investment context for a security by comparing key attributes of that security to its peer group and market. The four key attributes depicted are: growth, returns, multiple and volatility. Growth, returns and multiple are indexed based on composites of several methodologies to determine the stocks percentile ranking within the region's coverage universe.

The precise calculation of each metric may vary depending on the fiscal year, industry and region but the standard approach is as follows:

Growth is a composite of next year's estimate over current year's estimate, e.g. EPS, EBITDA, Revenue. **Return** is a year one prospective aggregate of various return on capital measures, e.g. CROCI, ROACE, and ROE. **Multiple** is a composite of one-year forward valuation ratios, e.g. P/E, dividend yield, EV/FCF, EV/EBITDA, EV/DACF, Price/Book. **Volatility** is measured as trailing twelve-month volatility adjusted for dividends.

Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

GS SUSTAIN

GS SUSTAIN is a global investment strategy aimed at long-term, long-only performance with a low turnover of ideas. The GS SUSTAIN focus list includes leaders our analysis shows to be well positioned to deliver long term outperformance through sustained competitive advantage and superior returns on capital relative to their global industry peers. Leaders are identified based on quantifiable analysis of three aspects of corporate performance: cash return on cash invested, industry positioning and management quality (the effectiveness of companies' management of the environmental, social and governance issues facing their industry).

Disclosures

Coverage group(s) of stocks by primary analyst(s)

Lisa Yang: Europe-Media. Heath P. Terry, CFA: America-Internet. Masaru Sugiyama: Japan Internet and Games, Japan-Consumer Electronics, Japan-Media. Simona Jankowski, CFA: America-Consumer Hardware & Mobility, America-IT Hardware, America-Telecom Equipment. Heather Bellini, CFA: America-Software. Piyush Mubayi: Asia Pacific Media, Asia Pacific Telecoms. Brett Feldman: America-Telco, Cable & Satellite, America-Towers. Drew Borst: America-Media and Entertainment. Matthew Cabral: America-IT Hardware.

America-Consumer Hardware & Mobility: Apple Inc., BlackBerry Ltd., BlackBerry Ltd., Corning Inc., Garmin Ltd., GoPro Inc., Qualcomm Inc..

America-IT Hardware: Aerohive Networks Inc., Arista Networks Inc., Brocade Communications Systems, CDW Corp., Cisco Systems Inc., F5 Networks Inc., Hewlett Packard Enterprise Co., HP Inc., Motorola Solutions Inc., NetApp Inc., Nimble Storage Inc., Pure Storage Inc., Xerox Corp., Zebra Technologies Corp.

America-Internet: Amazon.com Inc., Bankrate Inc., Criteo SA, eBay Inc., Endurance International Group, Etsy Inc., Expedia Inc., Groupon Inc., GrubHub Inc., IAC/InterActiveCorp, LendingClub Corp., LinkedIn Corp., Match Group, Netflix Inc., Pandora Media Inc., PayPal Holdings, Priceline.com Inc., Shutterfly Inc., TripAdvisor Inc., TrueCar, Twitter Inc., WebMD Health Corp., Yahoo! Inc., Yelp Inc., Zillow Group, Zynga Inc..

America-Media and Entertainment: AMC Entertainment Holdings, AMC Networks Inc., CBS Corp., Cinemark Holdings, Discovery Communications Inc., IMAX Corp., Interpublic Group of Co., Lamar Advertising Co., Lions Gate Entertainment Corp., Omnicom Group, Outfront Media Inc., Regal Entertainment Group, Scripps Networks Interactive Inc., Starz, Time Warner Inc., Tribune Media Co., Twenty-First Century Fox Inc., Twenty-First Century Fox Inc., Viacom Inc., Walt Disney Co..

America-Software: Adobe Systems Inc., Akamai Technologies Inc., Alarm.com Holdings, Alphabet Inc., ANSYS Inc., Atlassian Corp., Autodesk Inc., Citrix Systems Inc., Facebook Inc., Microsoft Corp., Mimecast Ltd., MobileIron Inc., Oracle Corp., Rackspace Hosting Inc., Red Hat Inc., RingCentral, Salesforce.com Inc., Twilio, VMware Inc., Workday Inc..

America-Telco, Cable & Satellite: AT&T Inc., CenturyLink Inc., Charter Communications Inc., Comcast Corp., Communications Sales & Leasing Inc., DISH Network Corp., Frontier Communications Corp., Intelsat SA, Level 3 Communications Inc., Sirius XM Holdings, Sprint Corp., T-Mobile US Inc., Verizon Communications, Windstream Holdings, Zayo Group.

America-Telecom Equipment: Acacia Communications Inc., ADTRAN Inc., ARRIS International Plc, Ciena Corp., Finisar Corp., Infinera Corp., Juniper Networks Inc., Lumentum Holdings.

America-Towers: American Tower Corp., Crown Castle International Corp., SBA Communications Corp..

Asia Pacific Media: 58.com Inc., Alibaba Group, Astro Malaysia Holdings, Baidu.com Inc., Ctrip.com International, JD.com Inc., Kakao Corp., Naver Corp., NCSOFT Corp., NetEase Inc., New Oriental Education & Technology, SINA Corp., TAL Education Group, Tencent Holdings, Vipshop Holdings, Weibo Corp., Zee Entertainment Enterprises.

Asia Pacific Telecoms: Advanced Info Service PCL, Axiata Group, Bharti Airtel, Bharti Infratel Ltd., Chunghwa Telecom, Digi.com, Dish TV India, Far EasTone, HKT Trust, Hong Kong Broadband Network Ltd., Idea Cellular, Indosat, Intouch Holdings, KT Corp., KT Corp. (ADR), LG UPlus, M1 Ltd., Maxis Bhd, PCCW Ltd., PT Link Net Tbk, PT Sarana Menara Nusantara, PT XL Axiata, Reliance Communications, Singapore Telecommunications, SK Telecom, SK Telecom (ADR), SmarTone, StarHub, Taiwan Mobile, Telekom Malaysia, Telekomunikasi Indonesia, Total Access Communications, Tower Bersama Infrastructure Tbk, True Corp.

Europe-Media: Ascential Plc, Atresmedia, Auto Trader Group, Axel Springer AG, Daily Mail and General Trust, Havas, Informa, ITV Plc, JCDecaux, Lagardere, M6 - Metropole Television, Mediaset, Mediaset Espana, Modern Times Group, Pearson, ProSiebenSat.1, Publicis, RELX NV, RELX Plc, Rightmove Plc, RTL Group, Schibsted ASA, Scout24 AG, Sky Plc, TF1, UBM Plc, Vivendi, Wolters Kluwer, WPP Plc, Zoopla Property Group.

Japan Internet and Games: Bandai Namco Holdings, Capcom, CyberAgent, DeNA Co., Gree, Kakaku.com, Konami, LINE Corp., mixi, Nexon, Nintendo, Rakuten, Sega Sammy Holdings, Square Enix Holdings, Yahoo Japan.

Japan-Consumer Electronics: Panasonic Corp., Sony.

Japan-Media: Dentsu, Hakuhodo DY Holdings.

Company-specific regulatory disclosures

Compendium report: please see disclosures at http://www.gs.com/research/hedge.html. Disclosures applicable to the companies included in this compendium can be found in the latest relevant published research

Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global Equity coverage universe

	Rating Distribution			Investment Banking Relationships		
	Buy	Hold	Sell	Buy	Hold	Sell
Global	31%	54%	15%	66%	60%	50%

As of July 1, 2016, Goldman Sachs Global Investment Research had investment ratings on 2,963 equity securities. Goldman Sachs assigns stocks as Buys and Sells on various regional Investment Lists; stocks not so assigned are deemed Neutral. Such assignments equate to Buy, Hold and Sell for the purposes of the above disclosure required by the FINRA Rules. See 'Ratings, Coverage groups and views and related definitions' below. The Investment Banking Relationships chart reflects the percentage of subject companies within each rating category for whom Goldman Sachs has provided investment banking services within the previous twelve months.

Price target and rating history chart(s)

Compendium report: please see disclosures at http://www.gs.com/research/hedge.html. Disclosures applicable to the companies included in this compendium can be found in the latest relevant published research

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; for equity securities, market making and/or specialist role. Goldman Sachs trades or may trade as a principal in debt securities (or in related derivatives) of issuers discussed in this report.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director, advisory board member or employee of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman, Sachs & Co. and therefore may not be subject to FINRA Rule 2241 or FINRA Rule 2242 restrictions on communications with subject company, public appearances and trading securities held by the analysts.

Distribution of ratings: See the distribution of ratings disclosure above. **Price chart:** See the price chart, with changes of ratings and price targets in prior periods, above, or, if electronic format or if with respect to multiple companies which are the subject of this report, on the Goldman Sachs website at http://www.gs.com/research/hedge.html.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. **Australia:** Goldman Sachs Australia Pty Ltd and its affiliates are not authorised deposit-taking institutions (as that term is defined in the Banking Act 1959 (Cth)) in Australia and do not provide banking services, nor carry on a banking business, in Australia. This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act, unless otherwise agreed by Goldman Sachs. In producing research reports, members of the Global Investment Research Division of Goldman Sachs Australia may attend site visits and other meetings hosted by the issuers the subject of its research reports. In some instances the costs of such site visits or meetings may be met in part or in whole by the issuers concerned if Goldman Sachs Australia considers it is appropriate and reasonable in the specific circumstances relating to the site visit or meeting. **Brazil:** Disclosure information in relation to CVM Instruction 483 is available at http://www.gs.com/worldwide/brazil/area/gir/index.html. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 16 of CVM Instruction 483, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. **Canada:** Goldman Sachs Canada Inc. is an affiliate of The Goldman Sachs Group Inc. and therefore is included in the company specific disclosures relating to Goldman Sachs (as defined above). Goldman Sachs Canada Inc. has approved of, and agreed to take responsibility for, this research report in Canada if and to the extent that Goldman Sachs Canada Inc. disseminates this research report to its clients. **Hong Kong:** Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. **India:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited, Research Analyst - SEBI Registration Number INH000001493, 951-A, Rational House, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India, Corporate Identity Number U74140MH2006FTC160634, Phone +91 22 6616 9000, Fax +91 22 6616 9001. Goldman Sachs may beneficially own 1% or more of the securities (as such term is defined in clause 2 (h) the Indian Securities Contracts (Regulation) Act, 1956) of the subject company or companies referred to in this research report. **Japan:** See below. **Korea:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. **New Zealand:** Goldman Sachs New Zealand Limited and its affiliates are neither "registered banks" nor "deposit takers" (as defined in the Reserve Bank of New Zealand Act 1989) in New Zealand. This research, and any access to it, is intended for "wholesale clients" (as defined in the Financial Advisers Act 2008) unless otherwise agreed by Goldman Sachs. **Russia:** Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity. **Singapore:** Further information on the covered companies referred to in this research may be obtained from Goldman Sachs (Singapore) Pte. (Company Number: 198602165W). **Taiwan:** This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Conduct Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

European Union: Disclosure information in relation to Article 4 (1) (d) and Article 6 (2) of the European Commission Directive 2003/125/EC is available at http://www.gs.com/disclosures/europeanpolicy.html which states the European Policy for Managing Conflicts of Interest in Connection with Investment Research.

Japan: Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer registered with the Kanto Financial Bureau under registration number Kinsho 69, and a member of Japan Securities Dealers Association, Financial Futures Association of Japan and Type II Financial Instruments Firms Association. Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Ratings, coverage groups and views and related definitions

Buy (B), Neutral (N), Sell (S) -Analysts recommend stocks as Buys or Sells for inclusion on various regional Investment Lists. Being assigned a Buy or Sell on an Investment List is determined by a stock's return potential relative to its coverage group as described below. Any stock not assigned as a Buy or a Sell on an Investment List is deemed Neutral. Each regional Investment Review Committee manages various regional Investment Lists to a global guideline of 25%-35% of stocks as Buy and 10%-15% of stocks as Sell; however, the distribution of Buys and Sells in any particular coverage group may vary as determined by the regional Investment Review Committee. Regional Conviction Buy and Sell lists represent investment recommendations focused on either the size of the potential return or the likelihood of the realization of the return.

Return potential represents the price differential between the current share price and the price target expected during the time horizon associated with the price target. Price targets are required for all covered stocks. The return potential, price target and associated time horizon are stated in each report adding or reiterating an Investment List membership.

Coverage groups and views: A list of all stocks in each coverage group is available by primary analyst, stock and coverage group at http://www.gs.com/research/hedge.html. The analyst assigns one of the following coverage views which represents the analyst's investment outlook on the coverage group relative to the group's historical fundamentals and/or valuation. **Attractive (A).** The investment outlook over the following 12 months is favorable relative to the coverage group's historical fundamentals and/or valuation. **Neutral (N).** The investment outlook over the following 12 months is neutral relative to the coverage group's historical fundamentals and/or valuation. **Cautious (C).** The investment outlook over the following 12 months is unfavorable relative to the coverage group's historical fundamentals and/or valuation.

Not Rated (NR). The investment rating and target price have been removed pursuant to Goldman Sachs policy when Goldman Sachs is acting in an advisory capacity in a merger or strategic transaction involving this company and in certain other circumstances. **Rating Suspended (RS).** Goldman Sachs Research has suspended the investment rating and price target for this stock, because there is not a sufficient fundamental basis for determining, or there are legal, regulatory or policy constraints around publishing, an investment rating or target. The previous investment rating and price target, if any, are no longer in effect for this stock and should not be relied upon. **Coverage Suspended (CS).** Goldman Sachs has suspended coverage of this company. **Not Covered (NC).** Goldman Sachs does not cover this company. **Not Available or Not Applicable (NA).** The information is not available for display or is not applicable. **Not Meaningful (NM).** The information is not meaningful and is therefore excluded.

Global product; distributing entities

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce equity research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; in Canada by either Goldman Sachs Canada Inc. or Goldman, Sachs & Co.; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman, Sachs & Co. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

European Union: Goldman Sachs International authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, has approved this research in connection with its distribution in the European Union and United Kingdom; Goldman Sachs AG and Goldman Sachs International Zweigniederlassung Frankfurt, regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht, may also distribute research in Germany.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. The information, opinions, estimates and forecasts contained herein are as of the date hereof and are subject to change without prior notification. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division. Goldman, Sachs & Co., the United States broker dealer, is a member of SIPC (http://www.sipc.org).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and principal trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, principal trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

The analysts named in this report may have from time to time discussed with our clients, including Goldman Sachs salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analyst's published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analyst's fundamental equity rating for such stocks, which rating reflects a stock's return potential relative to its coverage group as described herein.

We and our affiliates, officers, directors, and employees, excluding equity and credit analysts, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of

individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options disclosure documents which are available from Goldman Sachs sales representatives or at http://www.theocc.com/about/publications/character-risks.jsp. Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For research, models or other data available on a particular security, please contact your sales representative or go to http://360.gs.com.

Disclosure information is also available at http://www.gs.com/research/hedge.html or from Research Compliance, 200 West Street, New York, NY 10282.

The New York Times | https://nyti.ms/1Svmzav

DealB%k WITH FOUNDER ANDREW ROSS SORKIN

Spotify Expected to Sign $1 Billion Financing Deal

By LESLIE PICKER and BEN SISARIO MARCH 29, 2016

Spotify is about to close on a $1 billion deal that would double the amount of financing the music-streaming company has raised since its founding a decade ago, people briefed on the matter said Tuesday.

The money comes in the form of convertible debt, which allows Spotify's investors to change their securities into equity at a future date, said the people, who spoke on the condition of anonymity because the deal was not yet public.

By using convertible debt, Spotify obtains the funds, without needing to change its valuation. The terms of the debt, however, may put pressure on the company to go public sooner. The company had an equity value of $8.4 billion last year.

Funds associated with the private equity firm TPG as well as the investment firm Dragoneer put in $750 million of the $1 billion, with the rest coming from other institutional investors, the people said. The transaction, which was placed by Goldman Sachs, is expected to close on Friday, they said.

News of the deal was reported earlier by The Wall Street Journal.

The terms give the investors the ability to convert to equity at a discount to an initial public offering price, two of the people briefed on the matter said. The discount increases if Spotify waits longer than a year to do so, they said. The coupon payment on the debt would also continue to rise over time, the people said.

The deal is similar to the one that Goldman Sachs arranged for Uber in January 2015. The ride-hailing company raised $1.6 billion in convertible debt. Should the company not go public within a certain time, the interest rate on those securities would climb.

TPG Special Situations Partners, an $18 billion fund within TPG that does transactions other than leveraged buyouts, participated in the deal, as did TPG Growth, which has invested in other start-ups like Uber and Airbnb.

Spotify may use the funds for acquisitions, investments and international expansion, the people said.

As consumers have turned from CDs and downloads to streaming, Spotify has developed a powerful position in the music industry, helping albums by young stars like Drake, Justin Bieber and Ed Sheeran reach high levels on the charts. The service has amassed 30 million paying users, far more than any other similar outlet.

But Spotify has been challenged by Apple, which introduced a competing service, Apple Music, last year, as well as by a growing array of new streaming outlets. YouTube also introduced a paid version last year, and Pandora, which dominates Internet radio with more than 80 million listeners, is negotiating with record companies to enter the on-demand market alongside Spotify, Apple Music, Tidal and Rhapsody.

Spotify, which has both free and paid versions, has also found itself on the defensive as record companies have withheld major new releases for brief periods to try to increase sales on just paid services, which tend to pay higher royalty rates. Lately, new albums by Gwen Stefani, Future and the 1975 have been withheld from Spotify in their opening weeks.

For its music, Spotify depends on licensing deals with music companies. It does not have long-term contracts for two of its suppliers. Universal and Warner Music, two of the largest record companies, have had “month to month” licensing deals with Spotify for some time, according to two people with knowledge of those deals, which puts Spotify at risk of facing stricter licensing terms in the future, or even, potentially, losing that content.

But as Spotify has grown more powerful, the labels and artists have come to need it as much as it needs the music companies.

A version of this article appears in print on March 30, 2016, on Page B6 of the New York edition with the headline: Expected $1 Billion Financing Deal May Pressure Spotify to Go Public.

FEB 1, 2015 @ 01:00 PM 9,698 VIEWS

Peek Inside The Billionaire Portfolio Of Trump's Key Advisor

Spotify Has Hired Goldman Sachs To Raise $500 Million In Funding

Hugh McIntyre, CONTRIBUTOR

*I write about the music industry, from tech to charts and mor*FULL BIO

Opinions expressed by Forbes Contributors are their own.

Swedish streaming music platform Spotify is taking a giant step—just another in a series of recent big moves—to continue their reign as one of the world's biggest in the field. The Wall Street Journal reports that the company has hired Goldman Sachs to help them raise another huge round of funding. This time, Spotify is looking to add another $500 million to their net worth.

Adding an additional half a billion dollars to Spotify's already-impressive total could bring the company above $7 billion, though exactly how much is raised is yet to be seen.

The company has been discussing an IPO for some time now, but with this latest round of fundraising, those close to the deal say that such an offering could now be at least another year away. Spotify's last round of funding was back in 2013, when the company was able to raise $250 million. The year before that, they raised just $100 million, so it seems that with every passing year, Spotify's fundraising goal become more and more ambitious.

Spotify could be called the world's most popular streaming music service, depending on what metric is being used. The firm recently announced that they now have 60 million subscribers, 15 million of which are paying for the service.

With an additional $500 million in their pocket, Spotify is slowly edging out the competition to become the number one service for streaming music. While sites like Pandora also boast impressive numbers, it is unclear if the money they bring in from advertisements can match Spotify's revenues from monthly dues, which many members don't seem to mind paying. Spotify reportedly paid over $1 billion in royalties last year, and that number is likely to rise.

Both Spotify and Pandora (as well as many of their competitors) are currently looking for creative ways to reach new customers, something they will have to do as the typical user base, one that is familiar with the idea of streaming music and is ready to pay from the beginning, becomes saturated. Earlier this week, Spotify announced a new partnership with Sony, which will see them backing a new venture between the two called PlayStation Music.

Gallery

The Biggest U.S. IPOs Of The Last 25 Years

Launch Gallery
11 images

Comment on this story

Print | Report Corrections | Reprints & Permissions


TRENDING

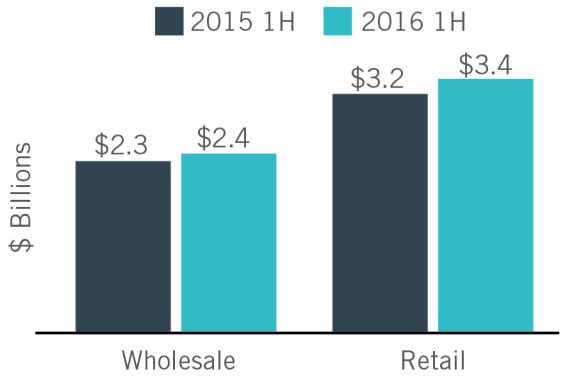
News and Notes on 2016 Mid-Year RIAA Music Shipment and Revenue Statistics

Joshua P. Friedlander | Senior Vice President, Strategic Data Analysis, RIAA

For the first half of 2016, strong growth in revenues from subscription streaming services more than offset declines in unit based sales of physical and digital music download products. Overall revenues at retail increased 8.1% on a year-over-year basis to $3.4 billion, the strongest industry growth since the late 1990's. At wholesale, value increased 5.7% to $2.4 billion.

Figure 1

U.S. Music Industry Mid-Year Revenues
Source: RIAA

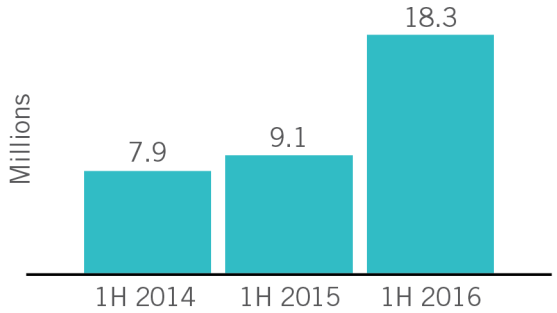


Revenues from streaming services continued to grow strongly both in dollars and share of total revenues. First half (1H) 2016 streaming music revenues totaled $1.6 billion, up 57% year-over-year, and accounted for 47% of industry revenues compared with 32% in 1H 2015. This category includes revenues from subscription services (such as Apple Music, TIDAL and paid versions of Spotify, among others), streaming radio service revenues that are distributed by SoundExchange (like Pandora, SiriusXM, and other Internet radio), and other non-subscription on-demand streaming services (such as YouTube, Vevo, and ad-supported Spotify).

Paid subscriptions experienced massive growth in the first half of 2016. The entrance of new services like Apple Music and TIDAL, and growth from services like Spotify Premium, helped both revenues and the number of paid subscriptions more than double versus the prior year. First half revenues from subscription music streaming services surpassed $1 billion for the first time, growing 112% to $1.01 billion.

Figure 2

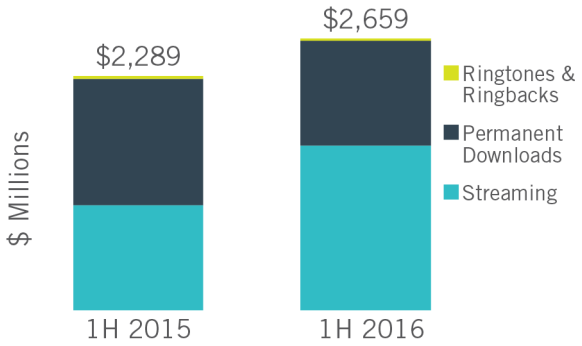
U.S. Paid Subscriptions, 1H Average
Source: RIAA



Subscriptions alone accounted for 30% of industry revenues for the first half of 2016, and the number of paid subscriptions grew 101% to average 18.3 million for the same period. The revenue growth from subscriptions alone more than offset the declines from physical sales and permanent digital downloads.

Figure 3

U.S. Digital Music Revenues Mid-Year
Source: RIAA

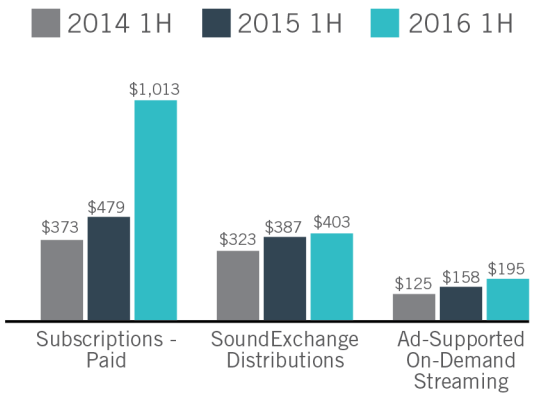


All three formats of streaming music had revenue growth in the first half of 2016. SoundExchange distributions grew 4% to $403 million, an all-time high for the first half of the year. On-demand ad-supported streaming grew 24% y-o-y to $195 million.

Figure 4

U.S. Streaming Music Revenue, Mid-Year

Source: RIAA



The total value of digitally distributed formats was $2.7 billion – up 16% compared to the 1H of 2015. Digital accounted for 80% of the overall market by value, compared with 74% for 1H 2015 (note Synchronization excluded from this figure).

Revenues from permanent digital downloads (including albums, single tracks, videos, and kiosk sales) declined 17% to $1.0 billion for the first half of 2016. Digital albums continued the trend of outperforming individual tracks. The total value of digital albums was $500 million, down 11% versus the same period the prior year, and digital album units were down 15% to 48.2 million. Digital track sales declined by value 22% to $520 million, with sales volume down 22% to 432 million units.

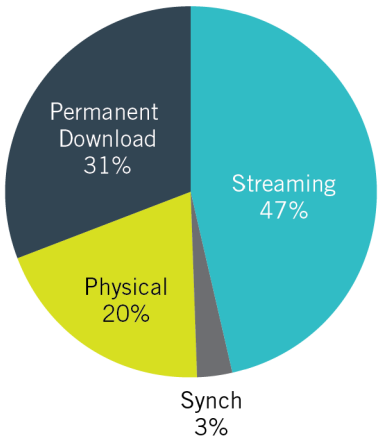
The total value of shipments in physical formats was $672 million, down 14% versus 1H 2015. CDs made up 66% of total physical shipments by value. Vinyl albums were down 6% by value for the first half of the year, and accounted for 31% of physical shipments by value. Synchronization royalties were $100 million for the first half of the year, virtually flat versus 1H 2015.

These first half 2016 results illustrate the emergence of paid subscriptions as a primary revenue driver for the United States music industry. For the first time, paid subscriptions were virtually on-par with paid downloads as the biggest single format revenue source. Streaming became the overall largest revenue contributor by a wide margin.

Figure 5

U.S. Recorded Music Revenues 1H 2016

Source: RIAA



Note – 2015 data has been updated.

Please note that the RIAA presents the most up-to-date information available in its industry revenue reports and online statistics database: https://www.riaa.com/u-s-sales-database.

For news media inquiries, please contact:
Jonathan Lamy
Cara Duckworth Weiblinger
Liz Kennedy
202-775-0101

2016 Mid-Year Industry Shipment and Revenue Statistics

202-775-0101

United States Unit Shipments and Estimated Retail Dollar Value (In Millions, net after returns)

DIGITAL PERMANENT DOWNLOAD		1H 2015	1H 2016	% CHANGE 2015-2016
(Units Shipped) (Dollar Value)	**Download Single**	554.5 $665.2	432.0 $519.5	-22.1% -21.9%
	Download Album	56.4 $564.7	48.2 $500.1	-14.5% -11.4%
	Kiosk[1]	1.2 $2.0	1.0 $1.7	-19.2% -18.1%
	Music Video	1.8 $3.6	1.4 $2.8	-23.0% -23.0%
	Ringtones & Ringbacks	11.8 $29.3	9.1 $22.7	-22.6% -22.6%

DIGITAL SUBSCRIPTION & STREAMING			
SoundExchange Distributions[2]	$387.2	$403.4	4.2%
Paid Subscription[3]	9.1 $478.6	18.3 $1,013.1	100.7% 111.7%
On-Demand Streaming (Ad-Supported)[4]	$158.2	$195.4	23.6%
TOTAL DIGITAL VALUE	$2,288.9	$2,658.7	16.2%

Synchronization Royalties[5]	$101.0	$100.4	-0.6%

PHYSICAL				
(Units Shipped) (Dollar Value)	**CD**	43.8 $531.0	38.9 $443.9	-11.2% -16.4%
	CD Single	0.3 $0.8	0.0 -$0.1	-109.1% -116.4%
	LP/EP	9.2 $221.1	8.4 $207.1	-9.1% -6.3%
	Vinyl Single	0.4 $4.2	0.3 $3.2	-28.2% -23.9%
	Music Video	1.2 $23.9	0.8 $15.8	-32.8% -34.0%
	DVD Audio	0.1 $2.4	0.0 $1.5	-47.1% -39.6%
	SACD	0.0 $0.4	0.0 $0.5	13.8% 39.5%
	Total Physical Units **Total Physical Value**	**55.0** **$783.9**	**48.4** **$671.9**	**-12.0%** **-14.3%**

Total Retail Units **Total Retail Value**	**47.4** **$727.4**	**41.0** **$631.5**	**-13.5%** **-13.2%**

TOTAL DIGITAL AND PHYSICAL			
Total Units[6] **Total Value**	**680.6** **$3,173.8**	**540.0** **$3,431.0**	**-20.7%** **8.1%**
% of Shipments[7] Physical Digital	**1H 2015** 26% 74%	**1H 2016** 20% 80%	

For a list of authorized services see **www.whymusicmatters.com**

Retail Value is the value of shipments at recommended or estimated list price
Formats with no retail value equivalent included at wholesale value

Historical data updated for 2015

[1] Includes Singles and Albums
[2] Estimated payments in dollars to performers and copyright holders for digital radio services under statutory licenses
[3] Streaming, tethered, and other paid subscription services not operating under statutory licenses
Subscription volume is average number of subscriptions for subscription services
[4] Ad-supported audio and music video services not operating under statutory licenses
[5] Includes fees and royalties from synchronization of sound recordings with other media
[6] Units total includes both albums and singles, and does not include subscriptions or royalties
[7] Synchronization Royalties excluded from calculation

CO EX. R-9

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-12

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-13

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-14

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

Amazon Music Unlimited FAQ

Back to: Amazon Music Unlimited | Prime Music | Echo Plan | Family Plan

What is Amazon Music Unlimited?

Amazon Music Unlimited is a premium music subscription service featuring tens of millions of songs and thousands of expert-programmed playlists and stations. With Amazon Music Unlimited, you can listen to any song, anytime, anywhere, on all your devices – smartphone, tablet, PC/Mac, Fire TV, and Alexa-enabled devices like Amazon Echo. You'll never hear or see an ad, and of course you can download songs or playlists for offline listening. Amazon Music Unlimited gets to know you, personalizing your recommendations based, on your listening habits, from a catalog of tens of millions of songs. Whether you're after the perfect dinner-party playlist, an all-weekend listening session with the entire Beatles catalog, the latest hits from Bruno Mars, or recommendations for new indie music to discover, Amazon Music Unlimited has it all. As a Prime member, you can join Amazon Music Unlimited for $7.99/month for a monthly subscription or $79/year for an annual subscription. Non-Prime customers pay $9.99/month.

What is the difference between Prime Music and Amazon Music Unlimited?

Prime Music is included with your Prime membership at no additional cost. It features over 2 million songs and more than a thousand playlists and stations programmed by Amazon's music experts. On Prime Music, you'll find the perfect soundtrack for your backyard BBQ, your morning run, or your evening study session. Play music on all your favorite devices and download to play offline.

With Amazon Music Unlimited, you get all of the great features and functionality of Prime Music…and a lot more. Amazon Music Unlimited offers tens of millions of songs and thousands of expert-programmed playlists and stations, including the hottest new releases from today's most popular artists. Amazon Music Unlimited's vast catalog allows you to dig deep into the vaults of your favorite artists, enjoy the latest and greatest hits, and explore new genres and styles. Prime members can join Amazon Music Unlimited for only $7.99/month for a monthly subscription or $79/year for an annual subscription. Non-Prime customers pay $9.99/month.

Who may be part of a Family Plan?

Family members must be at least 13 years old.

Are Family Plan accounts shared?

Accounts are not shared and there is no common family profile. Each family member has an Amazon account with personalized recommendations.

Who pays for the Family Plan?

The person who signs up for the Family Plan is the subscriber and pays $14.99/month or $149/year (available to Prime members only) using a payment method like a credit or debit card. This payment method is then shared across the family members who join.

What is a "shared payment method"?

A shared payment method is a credit or debit card that one family member agrees to share with each family member on the Family Plan. This payment method can be used to purchase items on Amazon. The first time a physical purchase is made on the shared payment method, family members are asked to enter the full card number for verification. Digital purchases do not require this step. After a family member makes a purchase, the subscriber of the Family Plan will receive an email listing the items that were purchased on the shared payment method.

Will we each have our own music libraries and personalized recommendations in a Family Plan? Everyone in our family has different musical tastes and interests.

Yes. You'll see all of your own music, library, playlists, and personalized recommendations. Each family member (up to six) has the same functionality as an Individual Plan subscription.

How many devices can play music at the same time with Family Plan?

You and your family can stream music on up to 6 devices at the same time.

With the Family Plan, do our shared home devices–for example, the Echo in the kitchen and the Dot in living room–each need to be associated with a different family member to play at the same time?

No, those can be associated with one family member's account and you will still be able to stream music on up to 6 devices as the same time.

What is the Echo plan?

We know how important music is to Amazon Echo owners, so we created a special subscription plan just for them. For $3.99/month, listen to Amazon Music Unlimited on a single Echo, Echo Dot, or Amazon Tap. Amazon Music Unlimited has a catalog of tens of millions of songs, so now you can ask Alexa to play just about any song or artist. Think of Echo plus Amazon Music Unlimited as the ultimate personalized jukebox, with Alexa as the DJ. To start your free trial, just ask, "Alexa, try Amazon Music Unlimited."

Do I need the Echo plan to listen on my Echo?

No. All Amazon Music Unlimited subscription plans work on Echo devices. So does Prime Music. The Echo Plan is a special, low-cost subscription plan designed for Echo owners who want to listen to Amazon Music Unlimited on their Echo but aren't interested in listening on other devices like smartphones, tablets, or computers.

Which Amazon Music Unlimited plan is right for me?

If you want to listen to Amazon Music Unlimited on all your devices – smartphone, tablet, PC/Mac, tablet, Fire TV, and Amazon Echo – select the Individual Plan.

Families can benefit from great savings with the Family Plan. Up to 6 family members can listen, all at the same time. Get all the benefits of the Individual Plan with personalized recommendations, music and playlists for all.

Exclusive music listening with your Echo? If you only want to listen to Amazon Music Unlimited on your Echo, Echo Dot, or Amazon Tap, activate the Echo Plan. You can always upgrade to the Individual Plan later if you want to listen on more than your Echo device. Just ask, "Alexa, upgrade my Amazon Music Unlimited subscription," or visit Your Amazon Music Settings.

I have multiple Echo devices. With the Echo plan, can I listen to Amazon Music Unlimited on all of them?

The Echo Plan allows you to listen to Amazon Music Unlimited on a single Echo, Echo Dot, or Amazon Tap for $3.99/month. It can't be used on multiple Echo devices. To listen to Amazon Music Unlimited on multiple your devices (like your smartphone, tablet, PC/Mac, and Fire TV) sign up for the Individual plan.

How do I start my free trial for the Echo plan?

You can only start a free trial for the Echo Plan by asking Alexa on an Amazon Echo, Echo Dot, or Amazon Tap. To start your free trial, just ask, "Alexa, try Amazon Music Unlimited."

What are Alexa voice controls?

Alexa voice controls are the ways you can ask Alexa to play music. If you've listened to music on an Echo, Echo Dot, or Amazon Tap, you're already familiar with Alexa voice controls like, "Alexa, play Adele," or, "Alexa, play jazz music."

Amazon Music has recently introduced many new and innovative Alexa voice controls to make asking for music more natural and fun than ever. Here are a few examples:

- Want to hear the latest song or album by your favorite artist but don't know the title? Try, "Alexa, play the new song by Bruno Mars," or, "Alexa, play the latest album by Norah Jones."
- Have words to a song stuck in your head but can't remember the name of the song? Just say a few words and Alexa will play it for you. Try, "Alexa, play the song that goes 'I'll Be Your Lifeline Tonight.'"
- Want to re-live the music from your college days? Try, "Alexa, play the most popular rock from the '90s."
- Feeling down and need a pick-me-up? Try, "Alexa play happy R&B music."
- Want to listen to early catalog from a favorite artist? Try, "Alexa, play Van Halen from the '70s."
- Having friends over? Try, "Alexa, play music for a dinner party."
- Want to be surprised? Try, "Alexa, play the Song of the Day."

Is Prime Music going away?

No, Prime Music is not going away. In fact, it's better than ever, with a growing catalog of over 2 million songs, more and updated stations and playlists, and a brand new layout. And of course it's still included with your Prime membership at no additional cost. Learn more.

Compare plans:

Features	Prime Music	Amazon Music Unlimited Echo plan	Amazon Music Unlimited Individual plan	Amazon Music Unlimited Family plan
Ad-free, on-demand	●	●	●	●
Alexa voice capabilities	●	●	●	●
Offline playback	●		●	●
Supported Devices	All	Echo/Dot/Tap	All	All
Number of accounts	1	1	1	6
Number of songs	Over 2 million	Tens of millions	Tens of millions	Tens of millions
Prime - monthly price	**Included with Prime**	**$3.99**	**$7.99**	**$14.99**
Prime - annual price	**Included with Prime**	-	**$79**	**$149**
Non-Prime - monthly price	-	**$3.99**	**$9.99**	**$14.99**
Non-Prime - annual price	-	-	-	-

Thursday, **26 January 2017**

'Netflix tax' pushes Spotify price up

Entertainment (/entertainment) > Music (/entertainment/music) 1 (/entertainment/music/netflix-tax-pushes-spotify-price#comments)

Netflix's recent tax push has lead to streaming service Spotify increasing its price of its "premium" subscription. Photo: Getty Images

Music streaming service Spotify has increased its prices by $2 a month due to a New Zealand tax introduced last year.

Spotify said in a statement that the price for new "premium" subscribers would increase from $12.99 a month to $14.99 from February 1.

Existing subscribers will continue to pay $12.99 a month until February 28.

The so-called "Netflix tax" came into effect in November, following which its name-sake also raised its prices.

Netflix, an online movie streaming service, lifted its prices from $12.99 a month to $14.99.

Physical goods bought online have long incurred a GST charge if they meet the value threshold, but the new tax affects things like streaming services, e-books, music and video downloads.

Under previous law, the government was missing out on $180 million a year by not collecting GST on online purchases, including $40 million from spending on Spotify, iTunes, Netflix and other online services.

NZME. (/source/nzme.)

1 4

1 (/entertainment/music/netflix-tax-pushes-spotify-price#comments)

RELATED STORIES

(/entertainment/music/lady-gaga-soars-over-super-bowl-bow-inclusion)

Lady Gaga soars over Super Bowl in bow to inclusion (/entertainment/music/lady-gaga-soars-over-super-bowl-bow-inclusion)

(/entertainment/music/cd-reviews-bats)

CD reviews: The Bats (/entertainment/music/cd-reviews-bats)

(/entertainment/music/classics-february-6th)

The Classics: February 6th (/entertainment/music/classics-february-6th)

(/news/dunedin/folk-singers-hitchhiking-tour)

Folk singers on hitchhiking tour (/news/dunedin/folk-singers-hitchhiking-tour)

MORE +

COMMENTS

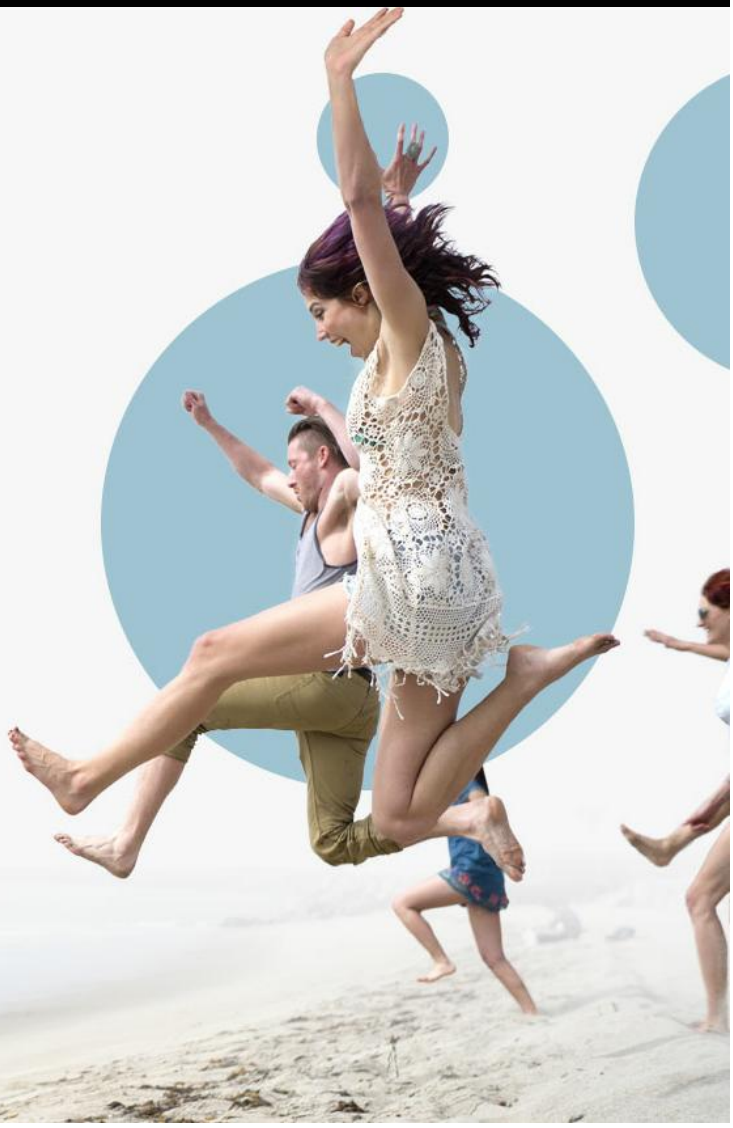
Spotify

Go Premium. Be happy.

Try Premium free for 30 days. Only $14.99/month after.*

START FREE TRIAL

* Terms and conditions apply. Open only to users who haven't already tried Premium.



Play any song.

Just search for the music you love and hit play.

Download music & listen offline.

No internet connection needed.

No ads.

Just uninterrupted music.

Better sound quality.

Listen in high definition.

Listen **free** or subscribe to **Spotify Premium**.

Free

$0.00 /month

- ✓ Shuffle play
- ✓ Ad free
- ✓ Unlimited skips
- ✓ Listen offline
- ✓ Play any track
- ✓ High quality audio

GET FREE

RECOMMENDED

Premium

$14.99 / month

Start your 30 day free trial*

- ✓ Shuffle play
- ✓ Ad free
- ✓ Unlimited skips
- ✓ Listen offline
- ✓ Play any track
- ✓ High quality audio

GET PREMIUM

Premium for Family

LEARN MORE

PlayStation®

LEARN MORE

* Spotify® 30-Days Free Trial Offer Terms and Conditions apply. Users who have subscribed to the Premium or Unlimited service or who have taken a trial are ineligible for this offer.

Spotify

COMPANY

About

Jobs

Press

News

COMMUNITIES

For Artists

Developers

Brands

USEFUL LINKS

Help

Gift

Web Player

New Zealand

IEEE International Conference on Computing, Analytics and Security Trends

19 – 21 December 2016 Pune, India.

Department of Computer Engineering & Information Technology
College of Engineering, Pune

Important Links:

> Conference Schedule

> Session Schedule

> Participation Registration - Open

> Exhibition Details

Academic Sponsors

TEQIP-II
A World Bank Funded Project

Signal & Image Processing Centre of Excellence

Invited Speaker

Scalable Causal Inference for Down-stream Impact of an Event

Dr. Vineet Chaoji, Manager, Applied Science at Amazon, Bengaluru, India.

Abstract:

Downstream Impact (DSI) measures the longer term impact of a customer action in terms of increase in revenue or units sold. The DSI of an event is critical to making a wide range of business decisions — e.g., how should one price the Kindle Paperwhite, which Prime benefit should be recommended to a customer, which product advertisement should shown to a customer, etc. One can think of millions of events within the Amazon ecosystem. Estimating the DSI of an event is a causal inference problem. The talk will introduce the DSI estimation problem and its connection to causal inference. Few techniques for computing the DSI will be discussed. Finally, I will present a scalable system to estimate the DSI for a large number of events.

Bio:

Vineet Chaoji is an Applied Science Manager within the Machine Learning team at Amazon where he leads projects related to econometric models of customer behavior, customer targeting and malware detection.

Prior to joining Amazon, he was a Scientist at Yahoo! Labs in Bangalore where his research focused on online advertising and social networks.

Title Sponsor

PERSISTENT

Platinum Sponsor

CISCO

Gold Sponsors

TATA
TATA CONSULTANCY SERVICES

sas THE POWER TO KNOW.

Vineet obtained his PhD in Computer Science from Rensselaer Polytechnic Institute.

He has published at top-tier data mining and database conferences and journals. Vineet has also served on the program committees of leading data and web mining conferences.

SAS R&D Pune, India

Bronze Sponsor

Science and Engineering Research Board

Technical Sponsor

>> IEEE Conference ID : 38062

About

» Call for Paper

» Guidelines for Authors

» Important Dates

Conference Tracks

» Track1 - Data Analytics...

» Track2 - Security...

» Track3 - Cloud Computing...

Conference Tracks

» Track4 - NLP and IR

» Track5 - Signal Processing...

» Track6 - Green Computing...

Download

» Conference Brochure

» Conference Schedule

» Session Schedule

» Hotel Details

IEEE International Conference on Computing, Analytics and Security Trends (CAST-2016).

CO EX. R-24

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-180

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-181

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

CO EX. R-183

RESTRICTED DOCUMENT

Subject to Protective Order in
Docket No. 16–CRB–0003–PR (2018–2022)
(Phonorecords III)

O P E N S E S S I O N

JUDGE BARNETT: Please raise your right hand.

Whereupon--

JOSHUA GANS,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. JANOWITZ:

Q. Good morning, Professor Gans.

A. Good morning.

MR. JANOWITZ: Your Honors, I would like to introduce Professor Gans as the Copyright Owners' expert witness.

BY MR. JANOWITZ:

Q. Professor Gans, can you please tell us about your current occupation and professional experience?

JUDGE BARNETT: And begin with a statement of your name and the spelling of your last name, please.

THE WITNESS: Right. My name is Joshua Gans. The spelling is G-a-n-s. The A is for Apple. My current roles, I am currently professor of strategic management and holder of the Jeffrey Skoll

Chair in technical innovation and entrepreneurship at the University of Toronto. I'm also the area coordinator, that's the department head of strategic management, and an honorary professor in the Department of Economics. I hold positions at the National Bureau of Economic Research, MIT, and I'm also chief economist of the University of Toronto's Creative Destruction Lab, which is a startup incubator.

My experience, I have touched on many areas of economics that are of relevance to this matter, most notably my work in innovation; formal intellectual property protection, including copyright and patents; regulatory economics, notably access pricing to essential facilities; and also digital markets and markets for on-line advertising.

My previous clients in consulting matter are extensive, covering antitrust, copyrights, and other matters. I've consulted on behalf of the -- testified on behalf of the -- consulted on behalf of the FTC and also the Australian Competition and Consumer Commission. I've got 150 academic publications and nine books.

And probably of most relevance is a set of research I conducted over the last 15 years into

the non-cooperative foundations of the Shapley value.

BY MR. JANOWITZ:

Q. And have you testified on behalf of any Australian tribunals?

A. I have appeared as an expert for the ACCC in a matter involving Fitness Australia and the Performing Rights Association in Australia to do with public licenses and copyright.

JUDGE FEDER: What is the ACCC, please?

THE WITNESS: Oh, it's the Australian Competition and Consumer Commission. It's a hybrid of the FTC and DOJ Antitrust Division.

JUDGE FEDER: Thank you.

BY MR. JANOWITZ:

Q. Professor Gans, I'd like you to look at your binder and if you'd look at tab that says 3028?

A. Yes. 3028?

Q. Yes.

MR. JANOWITZ: And just before that, since we've gone through his qualifications, Your Honors, I'd like to offer Professor Gans as an expert on behalf of the Copyright Owners.

JUDGE STRICKLER: In what fields?

MR. JANOWITZ: In economics with his

specialties and the focus of his testimony will be particularly on principles of Shapley value analysis and PCR.

MR. ASSMUS: No objection to him being offered as an expert in economics. I'm not sure he has laid the foundation for him being an expert in Shapley value concepts.

MR. JANOWITZ: I think -- I think -- I think we will get there. So if you -- if you'll hold that objection until the end --

JUDGE BARNETT: What about the --

MR. JANOWITZ: -- I think we'll be okay.

JUDGE BARNETT: Thank you. Professor Gans is qualified as an expert in economics, and I believe that one of his publications had to do with Shapley, but we'll get there.

MR. JANOWITZ: Thank you, Your Honor.

BY MR. JANOWITZ:

Q. So looking at the -- at Exhibit 3028, is that your direct written report on behalf of the Copyright Owners?

A. 30 --

Q. 3028. It's towards the end of your binder.

A. Oh, okay. Yes, it is.

Q. And take a look at the -- the last page and tell me if you can identify your signature. That will be on page 47.

A. Yes, it is.

Q. And I also ask you to take a look at Exhibit 3035.

A. Yes.

Q. I ask you if that is your written rebuttal testimony in this matter?

A. It is.

Q. And do you see your signature on that document as well?

A. Yes.

MR. JANOWITZ: Your Honors, I offer 3028, Professor Gans's written direct testimony, and 3035, his written rebuttal testimony, in evidence.

MR. ASSMUS: No objection.

JUDGE BARNETT: 3028 and 3035 are admitted.

(Copyright Owners Exhibit Numbers 3028 and 3035 were marked and received into evidence.)

BY MR. JANOWITZ:

Q. Professor Gans, what was your assignment in this matter?

A. My assignment was to assess the level and

structure of the copyright holders' proposal here and its economic reasonableness.

Q. And that -- and that proposal is what?

A. That proposal is for mechanical royalties to be the greater of .0015 dollars per play or $1.06 per user per month, whichever is greater.

JUDGE BARNETT: This is probably jumping to the conclusion of your testimony, but how did you define economic reasonableness?

THE WITNESS: I defined it -- well, you can define it in -- I guess, broadly or narrowly. The thing that I was focused on was in terms of whether the structure was going do things such as lead to exclusionary behavior and -- and issues downstream that were in contravention, to my understanding, of why we're here, and same with the level.

JUDGE BARNETT: Thank you.

BY MR. JANOWITZ:

Q. And, Professor Gans, based upon your work, did you form any conclusions?

A. Yes. Yes, I did. I -- my conclusions were as follows. We'll get into this in a little bit, but one of the things that I did, because I've had extensive experience in regulatory pricing rules

for access to essential facilities, was to look at those rules in particular, the efficient component pricing rule, ECPR, and to see whether it was of any useful guide in setting the rights in this matter.

And I found that actually what it gave, not -- it was not so much a formula but a set of principles that I believe were applicable for finding principled rates here, including rates that would allow for the recovery of opportunity costs, specifically for choices between alternative channels, and also ones that created favorable incentives downstream, not favoring one business model or another, and also allowing for innovation and entry downstream.

The second thing I did was I opined that the Shapley value approach could actually be applied fruitfully for thinking about the level -- level of interactive streaming rates and used to assess basically how a proposed mechanical rate would compare to rates that might prevail in the absence of the regulations that we're -- that we're determining here.

The -- in particular, the sound recording licenses which are -- have two qualities, one is they're free of such regulation and, two, they

perform a very similar economic role to the mechanical -- to the musical works license, copyright holdings -- could be a useful benchmark, but also bakes in real-world conditions into thinking about that.

And my ultimate conclusion was that the rates proposed by the copyright holders were actually conservative relative to those estimates derived from a Shapley value approach and benchmarks of outcomes in an unconstrained market, and so were reasonable.

Q. Professor Gans, what analysis did you perform in connection with your report?

A. I did several things. The first thing I did was, as part of thinking about the overall issue of reasonableness, was to sort of see how the performance of mechanical royalties has changed over time since 1999 when these -- these regulations came into effect.

I also looked at relevant principles. I come from a tradition in regulation where regulatory prices are not sort of benchmarked on what has been previously but are sort of derived from, well, let's get a certain number of principles and see if proposals are consistent with them. And I looked at

two, which was access pricing, notably the ECPR rule, and, secondly, game theory, of which I have extensive experience including using the Shapley analysis, which I found would be informative here.

Thirdly, I applied those principles to assess reasonableness, and allowed me to translate a freely negotiated, for instance, sound recording rate into an equivalent musical works rate and compare it to the copyright holders' proposal.

And then, finally, in the second report, I engaged in a review -- review and response to other experts' relevant analysis.

JUDGE STRICKLER: Professor Gans, good morning.

THE WITNESS: Good morning.

JUDGE STRICKLER: A question for you. I know you'll be getting into it in detail but, in regard to the efficient component pricing rule and the analysis that you did, did you also consider the variations on the ECPR that are known in economics as the MECPR, the market rate ECPR, which some economists have used to differentiate from the ECPR?

THE WITNESS: Yeah, I did -- I did consider -- consider them, mainly because the ECPR itself came up -- it was one of the first regulatory

rules proposed for essential facilities. And it came up in a very specific context that presumed certain things going on downstream.

I didn't -- I must admit I did not choose in my report to go into detail on the MECPR because I wasn't proposing that we use the efficient component pricing rule as a formula here -- the data required would not be available -- but instead the principles.

And the principles that I mentioned both paying a price right is an opportunity cost, which is a principle that comes across every regulatory pricing rule that I've ever come across, and also what I ended up calling business model neutrality, which I'll describe a little later, but I'm happy to describe it now, which was, you know, something that the ECPR, in particular, was very concerned about.

In other words, it came up in a context where you had a rail line and you had somebody own the rail line, and somebody would put in their own cars across that line. And then some other person said: Well, I want to transport, you know, iron ore rather than coal. Can I use your line rather than having to build a new one?

And -- and they wanted to come up with a

rule that, regardless of whatever these other people were carrying, they could work out, you know, what terms were needed to get access to this line.

And the ECPR had this quality that it had this simplicity and the simplicity for a reason. It wanted to make sure that everybody stuck to their roles and didn't try to second-guess, and it wanted to be, I guess, somewhat future-proof in that regard.

JUDGE STRICKLER: I just want to follow up briefly on my -- on your answer to my question about the MECPR.

THE WITNESS: Yes.

JUDGE STRICKLER: You said the data wasn't there to be able to do a full ECPR analysis, which you did not do.

THE WITNESS: Right.

JUDGE STRICKLER: You -- you applied general principles of the ECPR.

THE WITNESS: Yes.

JUDGE STRICKLER: Do you apply the principles -- and we'll get into the definitions later, perhaps -- of the MECPR?

THE WITNESS: Well, I think they're the same principles, except the MECPR comes with another

charge.

JUDGE STRICKLER: Can you define what it is?

THE WITNESS: Well, it's another charge, which is basically to regulate the degree of vertically integrated downstream market power. So, basically, our rail track, the people who built the rail track initially probably did it for a reason, and they used to have a monopoly on getting from point A to point B. And so the MECPR says: Oh, what we can do is we encourage this competition, not from somebody who is transporting something completely different but someone who is transporting a substitute. We can bring in better outcomes in terms of allocative efficiency for all consumers in the market.

JUDGE STRICKLER: Would it be fair to say --

THE WITNESS: By adopting the rule.

JUDGE STRICKLER: I'm sorry, I didn't mean to interrupt.

THE WITNESS: No, go ahead.

JUDGE STRICKLER: Would it be fair to say that, as a general principle, the ME -- the M stands for market; is that correct?

THE WITNESS: That's right.

JUDGE STRICKLER: That a general principle of the MECPR is that it's supposed to follow faithfully the same opportunity cost analysis that's embedded within the ECPR --

THE WITNESS: Right.

JUDGE STRICKLER: -- but eliminate from that opportunity cost the monopoly rents that would otherwise exist?

THE WITNESS: It -- it -- I guess I -- I didn't think of it so much in that way as -- as a response to the ECPR to do more than what the ECPR was doing.

The ECPR was about getting a certain sort of efficiency that is productive efficiency. The MECPR was: Oh, what if we want to do even more? What if we want to -- you know, we don't like having the monopoly at all. We want to -- and we can't just eliminate it because that would be for some other reason, so let's try and work this as a way of regulating the monopoly, and not just simply the access pricing problem. That's the way I see it.

JUDGE STRICKLER: By "regulating the monopoly," you mean diminishing the monopoly rents that would otherwise arise under a pure ECPR

analysis?

THE WITNESS: Yes.

JUDGE STRICKLER: Thank you.

MR. JANOWITZ: Thank you.

BY MR. JANOWITZ:

Q. This is somewhat redundant, but I will ask you what analysis you performed?

A. I think -- I think I went through the -- I've been through the analysis I performed. I'm done with that bit.

Q. I -- I direct your attention to your statement about the history of mechanical royalties. Perhaps you'd like to speak about that.

A. Yes. So the first thing I looked at was some historical things. And I -- I think this graph here encapsulates it, where I translated mechanical royalties into some estimates of what might look like a per-play rate over time and inflation-adjusted.

And you can see from 1909 to the present day, there has been a substantial reduction in the -- in what might be a per-play rate. But the most notable part, of which we can be more confident of it -- you know, understanding what the base is, is the most recent history over the past couple of

decades.

Basically, mechanical royalties have not adjusted inflation -- in inflation-adjusted terms have not changed over the past two decades.

Q. And I was then going to ask you about the principles of ECPR, but I think we've kind of gone past that as well.

But I -- I ask you, if you would like, if there are any matters that you didn't cover in your discussion with Judge Strickler --

A. Right.

Q. -- that you identify them now.

A. So I did -- yes, I did cover the two, opportunity cost recovery and what I've termed business model neutrality, which some other authors I've become aware of recently call a level playing field approach, in other words, trying to make it easy for downstream firms to compete on a level playing field.

I find that a -- a useful term because as my understanding of where this all came from, it was a concern that there wouldn't be a level playing field downstream, that there would be a player piano manufacturer who would dominate the entire market.

So I feel that that's an important --

that's an important thing that we get from the ECPR that I feel is a principle that would be useful here.

The implications, of course, what's interesting, the implications are that the business model neutrality principle favors charging all the downstream businesses the same rate. So you wouldn't have a special Amazon right, a special Spotify rate, et cetera; everybody would see the same thing as a mechanical rate. That's very common in -- in regulatory settings anyway.

But it also, for reasons that I can explain, suggests that the per-play rate in particular is superior to charging a percent revenue rate.

Q. And I'd like to explain that.

JUDGE STRICKLER: Can you explain that for us?

THE WITNESS: Yes. So, basically, business model neutrality implies something important. It allows you, you know, if you are not referencing in your rate the particular business model that happens to be downstream -- and here we've seen a lot of business models pursued from pure play, pure-play subscription, ad-supported,

bundled things, pre-installed on an iPhone, all that sort of stuff, okay?

But business model neutrality says, within the rate structure, it shouldn't address any of that. And what that means is it gives the opportunity for downstream firms to innovate and innovate in a term that we economists have called price discrimination, but actually because discrimination is an ugly word, as I often tell my students, and in this matter everybody has been quite happy with price discrimination, sometimes that is an issue, but not here, I probably want to think about it more as price innovation, because that's the language that people have really been using.

They're doing good things with their business models in order to earn more revenue without actually diminishing total surplus or anything else -- you know, without engaging in an abuse of monopoly power or any of the other things that might occur.

So business model neutrality implies price innovation. In more sense, it gives them maximum incentives for that.

JUDGE STRICKLER: Professor Gans --

THE WITNESS: Yes.

JUDGE STRICKLER: -- if we can just go back in reference to the previous -- previous slide, and I want to go back to your testimony about price discrimination business models.

THE WITNESS: Yes.

JUDGE STRICKLER: One of the arguments that the Services seems -- seem to make about the business models that they have is that they each have a business model, sometimes multiple business models within them, that cater to different segments of listeners based on willingness to pay.

THE WITNESS: Right.

JUDGE STRICKLER: So we'll see ad-supported services, we'll see discounts for family plans and those sort of things, and then a full price one.

Would you say that is an example of price discrimination?

THE WITNESS: So --

JUDGE STRICKLER: At the downstream level.

THE WITNESS: Certainly -- certainly, targeting customers who have different desires for your product can matter a lot. And one obvious

thing would be, you know, customers who really like music. Customers who really like interactivity versus those who couldn't care less. Customers who really hate advertising versus customers who don't mind advertising.

In some of my other work, I've been very concerned about the correlation between people who happen to like, for instance, television but happen to -- the people who like television more, happen to hate ads more interrupting it. And the same might occur for music. If you really liked music or you liked it for a workout, you may be more concerned about ads interrupting it than if you were just listening to it casually in the car or something.

So those are the sort of components of willingness to pay. And, you know, a savvy downstream firm will think about those customers and think about those different things and design their products around them.

JUDGE STRICKLER: You're talking about bundling those features based on -- all of the Services provide music.

THE WITNESS: Yes.

JUDGE STRICKLER: But some, as you just mentioned, can provide interactivity; some won't.

Some can --

THE WITNESS: Right.

JUDGE STRICKLER: -- can bother you with ads, and depending on your tolerance for ads, you'll pay a certain amount --

THE WITNESS: Right.

JUDGE STRICKLER: -- to avoid them. And that kind of bundling in economics is a form of price discrimination, isn't it?

THE WITNESS: That's right. That is a form of price discrimination, yes.

JUDGE STRICKLER: And would you say -- when you say there should be business model neutrality, are you saying there should be business model neutrality at each segment of the market that the -- that they're trying to cater to or it should be business model neutrality upstream regardless of whether there's an attempt to satisfy various willingnesses to pay?

THE WITNESS: So I think it should be upstream of it. And -- and there's a couple of reasons for that. I was about to go through one, but let me go through another first because it is more natural.

Is -- what are the segments? You know,

I've been in enough of these regulatory proceedings and -- and, you know, there are certain practical issues that come to the fore. You know, back in 2012, I couldn't get a family plan for my family for listening to music. And I -- you know, I -- you know, you have to buy individual subscriptions or you have to share a password or something like that.

But now we can get a family plan because a number of streaming services realized that that was a good way to bundle. They had seen it in other areas, and it's a good way to bundle. It's a great way to bundle if you want to deal with piracy because, I guess, there are some theories out there that piracy starts young or something like that. And I don't know what -- I don't know what it might be.

But, you know, someone did research and they worked out a family plan, and now we have a family plan and it's great. Somebody did research and worked out that it was a good idea to bundle music with people who happen to -- to like free shipping. Someone thought it was a good idea to -- you know, and they could go on. Some discounts to students. No one is giving a discount to a pensioner in this market, which is my normal go-to

price discrimination. I don't know why. Who else would have low willingness to pay for, I don't know, One Direction, I guess -- I'm going to insult someone, One Direction -- if it wasn't -- I mean, you want to target that. You have all your music but the -- whatever, you know what I mean.

So there's a practical issue, and we haven't even seen some innovations yet been interactivity and non-interactivity. I mean, because I know I can't -- any way, that is just me. So I don't want to -- but, you know, I think there's more to come and things that we haven't seen yet. So those are -- those are interesting.

But the second bit that comes from business model neutrality that I was about to get to, if it's okay, it was this downstream -- I want to call it empowerment in some sense, but let me explain why.

Suppose that you had a service or a new entrant, innovates, comes in with a new targeted customer segment, innovative pricing, bundling, I don't know what. Anything. And the revenue that they get increases a million dollars without diminishing usage at all. You know, so people are listening to as much music before, but now they're

willing to pay more because they've improved something.

If your royalties rates are a share of revenue, then part of that million dollars that you earned from your innovation is going to go upstream back to the copyright holders.

By contrast, if your royalty rate is just a usage price, then you capture that whole thing. You capture the whole million dollars or tens of millions of dollars or whatever you might have earned from that innovation.

In other words, we have a permissionless way for a service or a new entrant to come in, play, compete, add value, without, you know -- and here, and I guess these are my clients -- without the upstream firms coming in and reaching and say: Oh, I'll have a bit of that. Right? They're not saying, you know, for every bit of it, oh, I'll have a bit of that. They're just saying, look, we're interested in usage, we're interested in a number of people who -- who desire to pay for music and that's it.

So I think that that's a -- a useful feature from business model neutrality that I think -- and I don't want to go into the history of

economic thought -- that would have been recognized in the people who put forward ECPR. Easy to understand in that regard.

You can come in with any rail business you want and you don't have to explain to the track owner what you're doing, unless you're going to wreck his track or something, but you know what I mean.

JUDGE STRICKLER: Thank you.

BY MR. JANOWITZ:

Q. Now, you -- you've used a -- you referred to a benchmark using the Shapley approach in your report and referred, in particular, to the sound recordings.

Can you explain to us how the -- the level of sound recordings is relevant to your analysis?

A. Yes. Yes, I can. So when you get presented with a rate that's just a number -- and to me, the copyright proposal's rate is just -- just a number. I am aware that it is higher than mechanical royalty rates, at least seemingly than was previously done.

For me as an economist, you're actually saying is it too high? You know, what would be too

high a number? And so my view of that is, well, let's look at something similar going on in the market, and if we look at that something similar and this rate is above that, maybe it's too high.

Q. Excuse me. I just want to point out that we have a slide coming up that is restricted, and so I would propose not to put it up or to put it up perhaps taking the numbers out of it. Is that possible to block out the numbers? We can't do that.

The slide that's coming up, Professor Gans, perhaps you could simply describe, you know, the what's going on without actually using the numbers on the slide.

A. Is this a slide that's coming up with a graph?

Q. It's -- it would be your slide 12 or page 12.

A. Okay. All right. I will --

Q. That way we don't have to empty -- you know, ask people to leave the courtroom for a while.

A. All right. I will make sure I skip that. Okay. I have to remember what's in it, if I'm going to skip it.

Q. You can look at it.

A. So the -- sorry. I'll return.

So I was looking for something that would have those qualities. And so here's the reason why -- and I'm using the Shapley approach, and the reason I called it a Shapley approach was I had seen that in the copyright literature people had looked at the Shapley approach, and it seemed like a convenient end cap, but really there were a lot of bargaining theories and bargaining notions in economics that would give rise to similar things.

But the reason is, is that musical works and sound recordings -- musical works and sound recordings are both essential. In order to have a stream, you need to have somebody compose something and somebody perform it. So they're both essential.

Without one of those two elements, you've got nothing. So they're perfect complements in that regard.

And, secondly, the interactive sound recording rates happen to be freely negotiated. So one complement is freely negotiated. So if you look and said: Well, how do they do, you could see, you know, are they -- you know, what's -- what's determining their value? What's determining their performance?

And you could compare it to the proposal and say: Is this proposal going to mean that the musical works copyright holders are going to be even to do better than that, they're going to be freely negotiated, in which case you've gone too high, okay?

So that's what I did. And, in fact, if you compare the two, which in the slide that I'm not going to put up, you compare the two performance over time, sound recording rates in terms of per 100 streams have been consistently an order of -- you know, several times higher than musical works payments in total, including mechanical rates.

These fluctuate over time because -- in our calculations, the per-play fluctuates over time, but you can see that even in that regard, the proposed rate is not historically unprecedented. In 2012, we calculate that it would have been -- the percent revenue would have generated a higher -- higher per-play rate.

So there's those differences. Now, let me skip the slide. Yeah. Okay.

Now I've lost -- I can't remember what question you've asked me.

Q. That's all right. So let's -- let me

address you to the Shapley analysis that you used here.

A. Yes. So one of the reasons why the Shapley analysis is useful is because these regulations have a fairness objective. I wasn't the only one -- every economist I think you've asked about what they meant by fairness. It's -- it's 0not a topic that is sitting in an economic textbook somewhere. But the way in which, you know, I viewed it turned out to be similar to others in that it means that if you contribute something of economic value that is very similar to what somebody else does in terms of economic value, you should be expecting them to get the same out of it in terms of what they get to take home.

And so the Shapley analysis is useful because it implies, in this procedure, that the labels and publishers in aggregate should come away with equal profit. This finding happens no matter how the Shapley calculations are implemented. And you've seen some ways those have been done already here, and I do it a little bit different, but regardless of how you implement it, it's a -- it's a mathematical theorem that we're going to get out of that.

And it also says that the publisher rates should be closer to the sound recording royalty rate. And every analysis in this proceeding that has used the Shapley value has come up with that conclusion.

I can explain to you in particular this first part why labels and publishers should equal profit. Professor Watt used a circle. I'm going to use a jigsaw as a puzzle.

Imagine you have three pieces to a jigsaw, and if you can put them all together in this child-like way, solve that problem and get them all together, you -- you get them all in a room and you'll be able to create 100 dollars in value. Okay?

But if you do anything -- if you don't get that rectangle, like, for instance, if left has exited the room, you only get -- you get nothing. No one gets to play anymore. If there's a piece missing in a jigsaw, that's frustrating, okay?

Similarly, if right does that, exits the room, zero dollar value is created. And, similarly, if bottom here were to exit. So if everybody comes into the room and comes to a deal, 100 dollars in value created, each is essential, as I've just shown

or I've just described, to create any value. And in this case because each is essential, it implies that the Shapley values are equal.

Imagine that you go into a room and you say we all have to be here, how can we divide up this pot of money in a way that everybody feels it's fair? Give everybody equal parts.

JUDGE STRICKLER: Question for you, Professor. Sticking with your jigsaw, if we take the left block to be the sound recording --

THE WITNESS: Yes.

JUDGE STRICKLER: -- and the right block to be the musical works.

THE WITNESS: Right.

JUDGE STRICKLER: And the bottom to be the services.

THE WITNESS: Right.

JUDGE STRICKLER: As you pointed out, if you remove any one of those three blocks, you have zero value because you can never get from the music, if you have music --

THE WITNESS: Right.

JUDGE STRICKLER: -- to the -- to the listener. But if the bottom consists of multiple Services, streaming services, and let's take it to

the ECPR version or apply it beyond streaming, interactives to non-interactives to satellite to what have you --

THE WITNESS: Of course.

JUDGE STRICKLER: -- you could eliminate pieces of the block and still have value?

THE WITNESS: Yes.

JUDGE STRICKLER: And because of that, the bottom has less market power, the one you've labeled bottom.

THE WITNESS: Bargaining power.

JUDGE STRICKLER: Bargaining power. Less bargaining power than left -- than left or right, which are -- each one is necessary?

THE WITNESS: Right.

JUDGE STRICKLER: So that gets me to one of the criticisms that maybe you can respond to because maybe this is a good point to do it. It was made, I think, at least by Dr. Katz. I don't know if you -- did you read his rebuttal?

THE WITNESS: I did, yes.

JUDGE STRICKLER: And that is that one of the limitations on the Shapley valuation is that it locks in the existing bargaining power, I think he says market power, that exists. That is to say, in

the -- the bottom here has less -- each individual component does not have exit power that the left and right do, and, therefore, to call it fair requires you to accept --

THE WITNESS: Yes.

JUDGE STRICKLER: -- the existing bargaining power, and that's not necessarily an appropriate conception of fairness.

Hopefully, I've not tortured his criticism, but how do you respond to that?

THE WITNESS: No, I understand the criticism. So, you know, right here in this one here, you know, everybody is going to end up earning $33.33. The reason why that is occurring here, and this is why the jigsaws don't make us the market that we're analyzing, is precisely as you said, if -- is there a replaceable piece for bottom?

And, in fact, I'm going to -- because you've already done things, I'm just going to skip over a slide that was just showing some mathematics, and we can come back to it, if you'd like.

But I actually envisaged that. So, for instance, just for -- so that everybody is on the same page, imagine that you have this -- start off with this three-piece jigsaw, and then in come to

the market comes a piece that I'm going to call rock, because I'm amusing myself, and as you can see here, if the goal is to create a rectangle, rock can do that too. And so now we have the market, we've got four pieces, but two of them are substitutable with one another.

Now, that's a more complicated analysis. So what Professor Katz was looking at, he was saying: Oh, the analysis -- actually, I think it was -- yeah, the analysis of Shapley value sometimes aggregates unduly. And if you aggregate unduly, you are going to take away some of the substitution possibilities such as between rock and bottom here.

And so that is going to, you know, bake in -- it's going to give too much power to the downstream services, and that would not be reasonable. Now, of course, in this setting, you see what happens here -- I won't go -- I was speaking of the calculations of the Shapley value, but we can do it, is what everybody -- there's like now a lot more things that can happen. We call them permutations, different coalitions that can arise because we've got four rather than three.

It goes from 6 to 24. So we're not going to calculate it. Left and right walk away with 42

dollars each from that 100 dollars. And the Shapley values for rock and bottom are 8 dollars.

So the total aggregate going to the red jigsaw pieces has fallen from $33.33 to $16. So quite a dramatic drop because of they're perfectly substitutable with one another.

Notice it hasn't fallen to zero. Sometimes economists have an intuition that if something is perfectly substitutable, it falls to zero. But the Shapley analysis doesn't give that.

And it doesn't give it for a specific reason. Imagine that left and right are negotiating with -- well, here I'll do it with -- with rock, okay? If they're negotiating with rock, rock might say: Oh, I want a third of this, because I'm essential. And left and right say: You're not that essential; you can leave.

Now, rock could just leave and get nothing, but rock can also say: Well, I could leave, but then you're only going to be left with bottom. And bottom, knowing that, is going to come in and say: I want a third now, because you've -- because rock isn't your friend anymore and you've only got bottom.

So knowing that, I feel it would be

better if we had three kids because I'm pretty sure we could explain it to them.

Rock is going to say: All right, I'm not going to accept zero, but I'm going to accept something in this negotiation. And, similarly, if bottom happened to be the first in the room, they would get something.

Standing outside of it, if you were investing in this business, you wouldn't say rock and bottom are at rock bottom.

(Laughter)

THE WITNESS: I didn't see that coming. That was not planned, sorry.

They've got some value here.

JUDGE STRICKLER: And what you just explained is why upstream suppliers love to see a lot of competition downstream because --

THE WITNESS: Absolutely.

JUDGE STRICKLER: -- so they could whittle away any -- any monopoly or surplus rents that the bottoms of the world can get, keep it all upstream?

THE WITNESS: They can, they can. Now, just to preface, to go back before, if -- and it's hard, I can't stretch this analogy more, rock and

bottom may not be substitutes. One may do something different from the other. One may do half of what the other does but not everything. And that can also be accommodated in a Shapley analysis.

You know, none of the analysis here have gone down that route. It gets complicated very quickly. But it can be done.

JUDGE STRICKLER: Now, taking it from the other perspective, when you have two separate units within your Shapley analysis, left and right --

THE WITNESS: Right.

JUDGE STRICKLER: Let's leave rock and bottom out for the moment, and I think this goes to the two different alternatives that Dr. Marx had.

Left and right could be -- could be separate.

THE WITNESS: Yes.

JUDGE STRICKLER: Which they are in the market.

THE WITNESS: Right.

JUDGE STRICKLER: You know, in terms of having a different sound recording market and a different musical works market --

THE WITNESS: Yes.

JUDGE STRICKLER: Whether they're the

same entities or not. That's something the other experts have opined about.

THE WITNESS: Right.

JUDGE STRICKLER: But if you keep them separate, they actually -- WELL, you say that they because they're perfect complements -- that's the Cournot complements, let's say. Because they are complements, they each have more value separate than they do if they were combined?

THE WITNESS: So let me -- let me unpack a bit of that, because I heard in relation to that idea the term Cournot complements come up, and it's -- it's not applicable in this setting, but I can explain why.

But what is -- what is true from an analytical perspective in the Shapley value is that if you were to merge left and right into one right, copyright --

JUDGE STRICKLER: You'd have fewer permutations?

THE WITNESS: That's right. You would get fewer permutations, but also they as a group will get less than if they are separately. So separate -- separating out complements into different entities increases the amount of aggregate

Shapley values that accrue to them. So that is -- that is definitely true.

And this issue, I've seen this happen before in copyright matters as well, applying the Shapley value, is that there's a discussion over whether the rights are different.

My personal opinion is they are different rights. They're different entities. And we have got a proceeding focusing on one, so it's natural to separate them. But that's -- just was my -- my opinion there.

But the second part you sort of said, oh, it's Cournot complements. And the reason I just wanted to pause there, because I've been reading some of the testimony on that, is that Cournot complements is a different problem.

Cournot complements is a problem that arises that has an analogy -- Cournot complements arises not in these bargaining games but in, you know, pure market behavior, where an airline is charging a price to a resort and the resort is pricing its hotel and they don't think about each other enough, and so they end up not coordinating on their prices when that could be valuable to do so. So that's the -- that's the Cournot part. And so

it's a coordination problem.

What's very important here is the Shapley analysis is saying something economic. It's saying when everybody gets into a room, even if they're perfect complements, they're going to negotiate through those externalities that are leading to the Cournot complements problem.

So the inflation that's occurring here is because of the separation of the roles but not because of the same prisoner's dilemma-type behavior, which I could go into if you -- if you wanted, but would lead to, you know, prices potentially higher than the monopoly price and things like that.

And so I kind of -- I -- I wanted just to separate that out just for my -- to clarify.

JUDGE STRICKLER: Thank you.

JUDGE BARNETT: Before we start taking this theory into the specifics of this case, perhaps we should take our morning recess. 15 minutes.

(A recess was taken at 10:52 a.m., after which the hearing resumed at 11:14 a.m.)

JUDGE BARNETT: Please be seated. Lest any one in the room be paranoid about why we always come through this door grinning or laughing, it's

because we have a standup comic in the back room. Do not be paranoid. Mr. Janowitz?

JUDGE STRICKLER: And unlike you folks, they don't have to laugh.

(Laughter)

BY MR. JANOWITZ:

Q. Professor Gans, before we broke, there was a very brief discussion of Cournot complements. And since Cournot complements have -- it's a term that has been raised by some of the Services' experts, I wanted to spend just a little bit more time on it.

Can you tell me what the impact of bargaining is in a Cournot complement situation or the relevance of -- of the existence of bargaining would be?

A. Well, the way to think about it is to compare, you know, two different ways in which -- so if we had two complements, two perfect complements, essential ones like -- like here, and you want to compare what would happen if the two complements and their customers never got into a room together or even into a room bilaterally.

And the two complements just said: Here's my price. And if you want to -- the customer

knows, well, I'm going to have to buy both of these things, so the customer will care about the sum of the prices. It's as if you've got -- you're ordering something and you -- you ordered a piece of clothing but you separately had to go and arrange for shipping. The clothing person gives you a price. The shipping person gives you a price. But what you really care about is getting the clothing to you. So you care about the -- the total price.

In that situation, when they're setting their price and if they've got some degree of price-setting ability, the complements are -- they're going to care about the impact of raising their price on total demand because they know the consumers care about the whole price, but they won't care about raising the impact of their price or anticipate, necessarily, what it's going to do to the other firm and whether they are going to keep their price high or low. In fact, they don't care about them at all.

And that can lead to a situation where both keep on raising their price. And, theoretically, there could occur -- they could have a higher price than if they were a merged entity and setting prices in a coordinated fashion like a

monopoly.

Whereas the alternative is, instead of -- instead of just setting prices to the customer independently and at complete arm's length, the customer might go and negotiate. And the customer goes to left, in this instance, and says: Yeah, well, let's negotiate on a price. And in that, we're anticipating that we'll come to a deal with right for an acceptable price, and I'm going to feel them out as well. I could get everybody in the one room or I could do it just me running between them.

And it's going to internalize those externalities because, remember, when they were setting individual prices, left and right were harming each other. Left and right, if they could get together and agree on a price, could get more for themselves. Okay?

That negotiating -- and, here, it might be -- you know, if you're worried about, you know, just in practicalities, it might just be served by rock can internalize those effects. And Shapley, of course, assumes that they will do so and they will come to a -- an agreement that maximizes total surplus. So -- from an economic perspective. So, in other words, the Cournot complements problem that

would otherwise arise, if they weren't negotiating, does not arise in this instance.

And this happens whenever you've got a prisoner's dilemma. You know, I've sat in this courtroom twiddling my thumbs for a couple of days, but I notice what's going on, and I've noticed that, you know, different people -- you know, there are different streaming services here, and they each have their own set of questions that they want to ask experts.

And so if one cared about, as I did, and it's really only me, cared about the length of time, you might notice that one expert comes in and says -- one lawyer comes in and says their piece and another comes and says their piece, and I can imagine a situation where they're not caring enough about each other and it might lead to too much time spent in cross-examination, just to anticipate anyone cross-examining me, although I'm looking forward to it.

So -- but if you've got -- you could imagine agreements where they all got to negotiate or you can imagine a regulator comes and says you can't do more than this, they can coordinate that. And that's the difference between the two. Sorry.

Q. Thank you. Just one thing that I -- because we've gone through, I think, the -- the way that the bargaining works, but there's one table that we didn't focus on which -- I don't have the number.

A. Yeah. No --

Q. Do you know the one that I chose, the coalitions? Perhaps you could just -- just explain that a little bit since it figures into what you do later.

A. Yes, yes. No, I will. So what this is it's going back to the original game with just three players, so without rock in it, to give you an insight at how you might go about computing a Shapley value. The way that it works is this, is you -- there are a number of permutations, different coalitions and different orderings of those coalitions that can arise.

The analogy that people use to try to explain the Shapley formula is imagine a situation in which you have a room and the three players arrive at different times, but it's not until the third player stands at the door, like there, and says I'm not coming in unless I'm going to get something, that the fun starts to happen.

And so, for instance, in this first arrival where -- where bottom comes in followed by right, followed by left, left is the last person at the door. And they can say: I'm not coming in unless I get close to 100 dollars, take it or leave it. And so they get -- and so we mark 100 dollars and the others effectively get nothing.

But, of course, the arrival rates could be any number of six different things. If you were focusing on bottom, bottom is actually not going to do well until bottom actually arrives last, which happens as I've just depicted it here, in these last two.

And so if we're trying to calculate bottom's Shapley value, we'd say prior to them knowing who is going to get into the room first, what do you expect to get? And what you expect to get is you know, well, two -- two-sixths or one-third of the time, I'm going to be able to get in and it's going to be great for me and I'm going to get 100 dollars, but the other four-sixths of the time, two-thirds of the time, I'm not, and I'm going to get zero, which gives me a total Shapley value of $33.33.

There are other ways of calculating that,

but the reason -- I guess we'll come back to it -- is because this was the way when we got to later on trying to do this in closer to a real-world situation, and you had not six but 40,000 permutations, it was tables like this that were mattering.

Q. And just to be clear, you've used the arrival of the various participants --

A. Yes.

Q. -- as -- as the key to their value --

A. Well, that's what --

Q. -- that makes them essential, but that -- that isn't exactly what you're doing in -- in a true sense?

A. No, you can treat it as an algorithm that can help us compute the Shapley value or a story that we might explain, but there are other stories that can do so. And in some of my research, you could imagine this as a nested set of three different bilateral bargains going either in sequence or simultaneously.

And just negotiating an offer and an acceptance as you might, you know, with a car -- you know, car dealer or something like that. And take them -- take them back. So, you know, there are

different ways of doing it, but this is just the way that I think has been used here.

Q. And you -- you -- in your -- in your slides, you apply this to our situation, do you not?

A. In the -- in the slides -- oh, sorry, yeah. If we want to -- and I think this has already been anticipated. You know, obviously, I picked these jigsaws not because there's a puzzle but because they mean something to this matter.

And, in particular, we don't have to think about left, right, and rock. What we're really thinking about is left and right are played by the labels or label or labels and publisher, respectively. And so they might be creating some sort of value created. I'm just putting an algebraic value of V. Each copyright holder is essential to the creation of any value, and so regardless of what happens with everybody else, the Shapley values of those two entities are going to be equal.

Of course, in this matter, we've got a lot of everybody else. And the key point to note about that everybody else is that the -- the streaming services are not essential in the same way the Copyright Owners are.

If you got rid of every streaming service, obviously you've got an issue, but any individual one of them or even -- even small groups of them are not -- not essential at all.

JUDGE STRICKLER: But it would be essential if there was just one streaming service?

THE WITNESS: If there was just one streaming service, one could imagine it being essential, but even then, there's an issue because we have other channels of distribution as well.

JUDGE STRICKLER: Would you want to put those other channels of distribution into your Shapley model?

THE WITNESS: You can. It depends on what you're going to do with them. If you're going to make them -- look, you know, if you were doing this fully with the idea of being as accurate as a physicist might be in trying to launch a rocket to -- into earth orbit, you would have to put in all of these different variables.

If you're trying to get a sense of the magnitudes involved and to compare it to other things that are proposed out there, you can -- you can -- I don't want to call them shortcuts, but you can make assumptions. And you can -- you can -- you

won't just make assumptions; you'll think about what their role is.

JUDGE STRICKLER: Does it make sense to just -- so you don't make it too complicated but you add -- make it richer, does it make sense to have another category that is simply all other distribution?

THE WITNESS: It can. It can. And -- and, you know, I -- I wasn't thinking of that in terms of my direct testimony, but when I was working through the other Shapley approach here, that was used and we paid attention to that as well.

JUDGE STRICKLER: Dr. Marx's approach?

THE WITNESS: Dr. Marx's approach, that's right, included those other things. You know, not for the purpose of examining what happened to those other things but for substitution possibilities, which is what she was thinking of.

JUDGE STRICKLER: Thank you.

BY MR. JANOWITZ:

Q. Which -- which actually brings us to -- to what you did in your Shapley analysis in this case.

A. Right.

Q. Could you tell us what kind of Shapley

analysis you performed?

A. So what I was doing -- well, so, basically, the key starting point for me was this Shapley values of the labels and publishers being equal, if they're freely negotiated.

But you have to be careful because they're not the same. They -- they've got different costs. And we heard some of these costs this morning, and for labels, they've got their own costs as well. And so you have to be a little bit careful.

So in terms of dealing with that, there have been two approaches in this case, what I call a bottom-up and a top-down approach. And it's not related to my jigsaw, in case anyone is getting confused, because I am.

The -- the bottom-up approach was performed in this case first by Professor Marx. And I did the top-down approach. And they differ in a number of things. First of all, they differ in their purpose.

The bottom-up approach was really an exercise, as I read it, in modeling the royalty rate as the result of a hypothetical bargain. The top-down approach was to actually calculate this

benchmark I was worried about. Is this price too high or not?

The data is a little bit different in each, although there's some overlap. The data in the bottom-up approach is more -- there are more demanding data requirements. You need service revenue, you need non-content costs, and if you're thinking as Dr. Marx did, you need data from alternative services to interactive streaming.

For the top-down analysis, the real key variables were label profits, publisher profits, and publisher revenue in order to do that. So it's less data.

The method used, in the bottom-up approach, it was to compute the value of each coalition and use the Shapley value and then add non-content cost to work out the royalty rates. Much along the lines of that table would have been one way to do it. There are other ways as well.

The top-down approach is you -- all you have to do, all, is calculate revenue to make publisher profits equal to label profits, imagining the hypothetical situation where label -- or publisher profits were freely negotiated rather than restricted by regulation.

And then the output from each are different as well. The output from the bottom-up approach is you get the royalty rate in this case as a share of revenue, and you could convert that to per-play as well if you wanted to. And in the top-down approach, you get a benchmark royalty rate, actually only an upper benchmark royalty rate, and you can get it as a per-play or per-user charge. And that's what I did.

Now the advantage, why I started with the top-down approach, being fully aware you could do other things, was that it makes fewer assumptions. It relies only on the Shapley values being equal for essential inputs.

It exploits the symmetrical treatment of publishers and labels, and this is widely accepted as -- as relevant in this setting, and it's also -- obviously, the symmetrical treatment has to come out of Dr. Marx's treatment as well because it's the math of the Shapley value.

And, finally, another advantage is it uses the observed market rate, a market condition, to infer the Shapley value. So there's no estimation or calculation of numerous coalitions. There's no worrying about, you know, are services

aggregated or not aggregated and stuff like that. But you can still bake in some real-world factors and market conditions into doing that, which I -- I thought was attractive here.

Q. Professor Gans, before you move on, I just want to caution you, we -- because we're getting into the real numbers here --

A. Oh, that's right.

Q. -- these are going to be restricted.

JUDGE BARNETT: We will begin then a restricted session, so if you're in the hearing room and do not have permission to hear confidential or restricted information, please wait outside.

MR. JANOWITZ: Basically, this is restricted pretty much to the end of his testimony.

JUDGE BARNETT: Okay. Thank you.

(Whereupon, the trial proceeded in confidential session.)

C O N F I D E N T I A L S E S S I O N

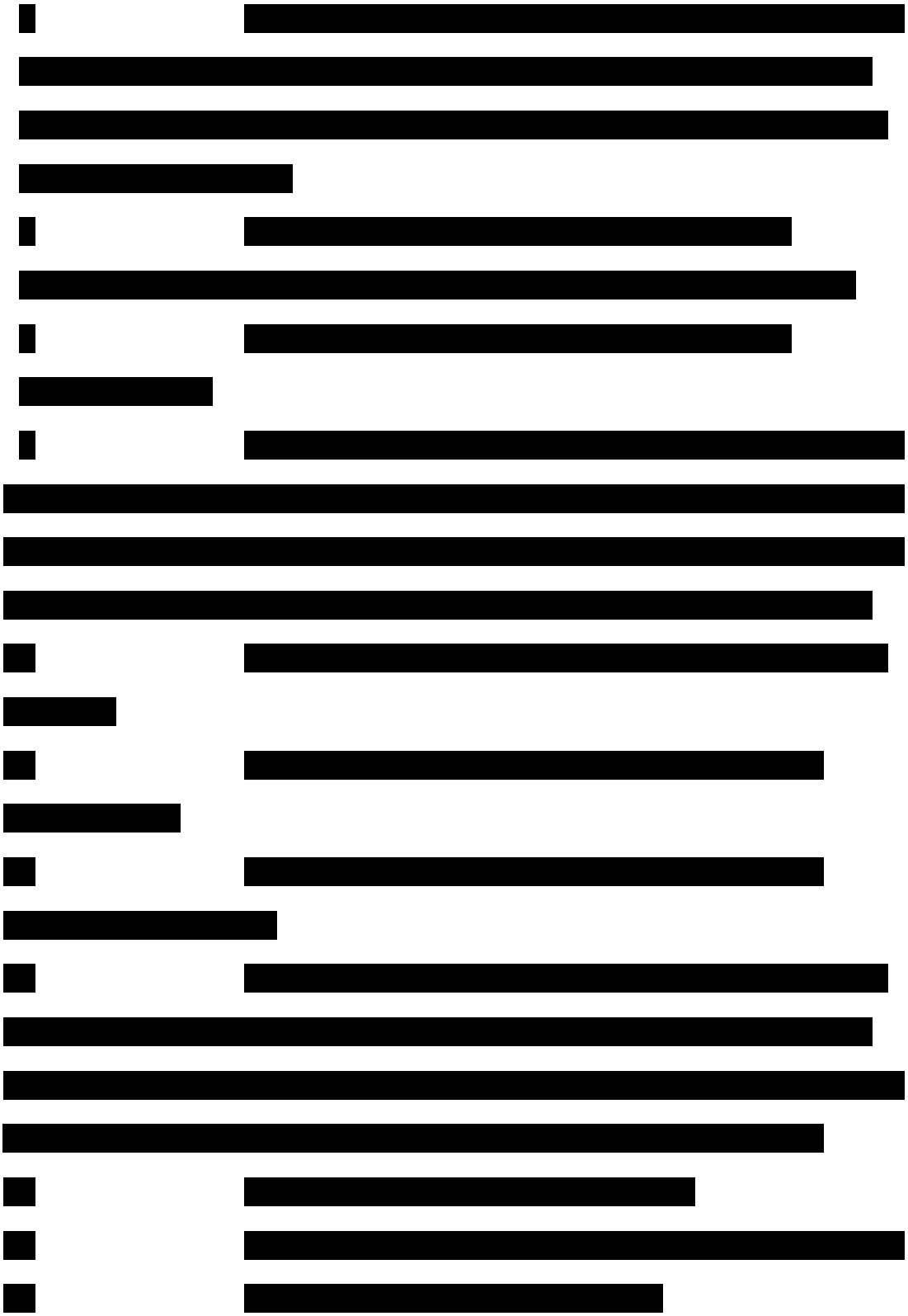
[redacted]

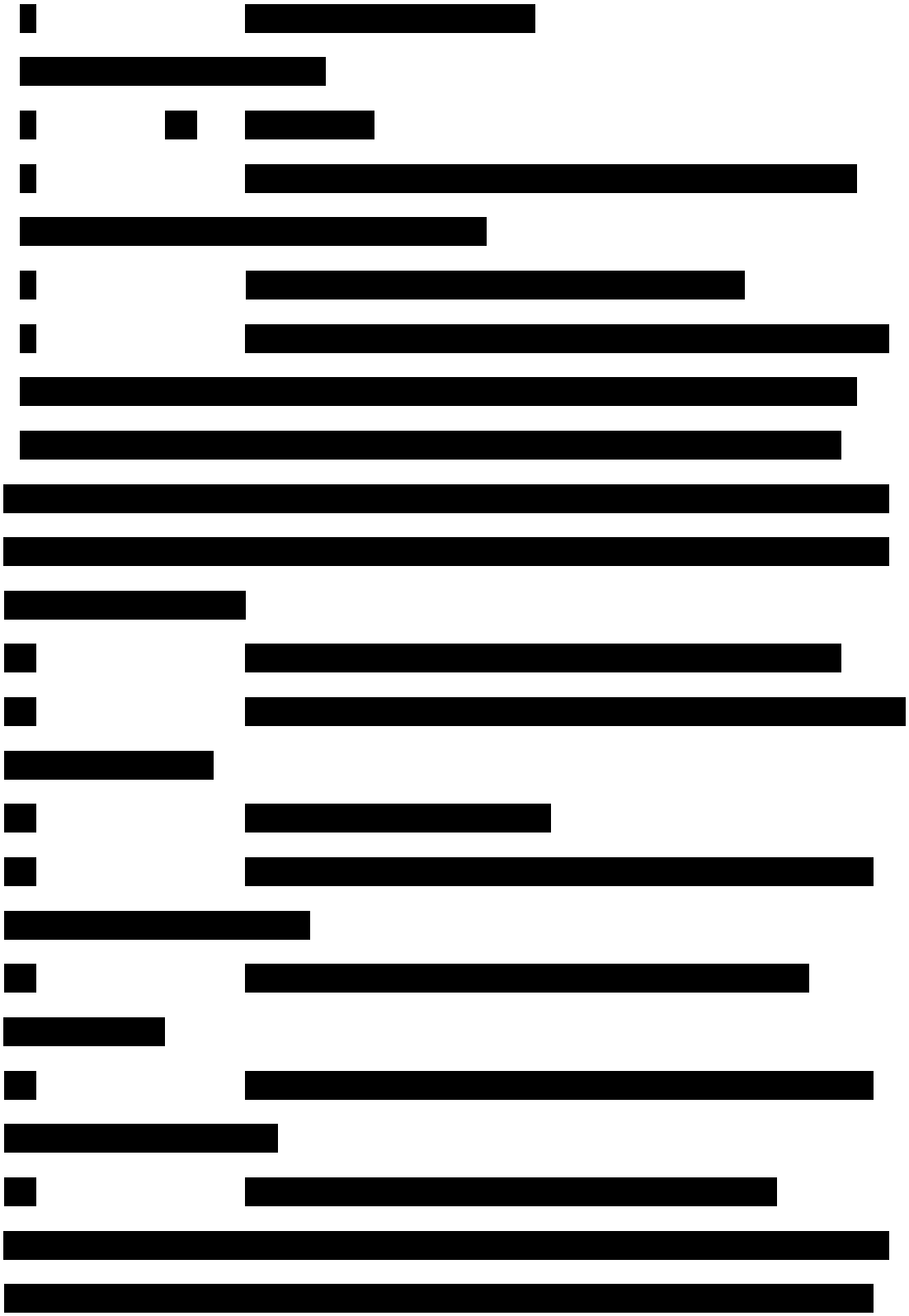
[redacted]

[redacted]

[redacted]

[redacted]

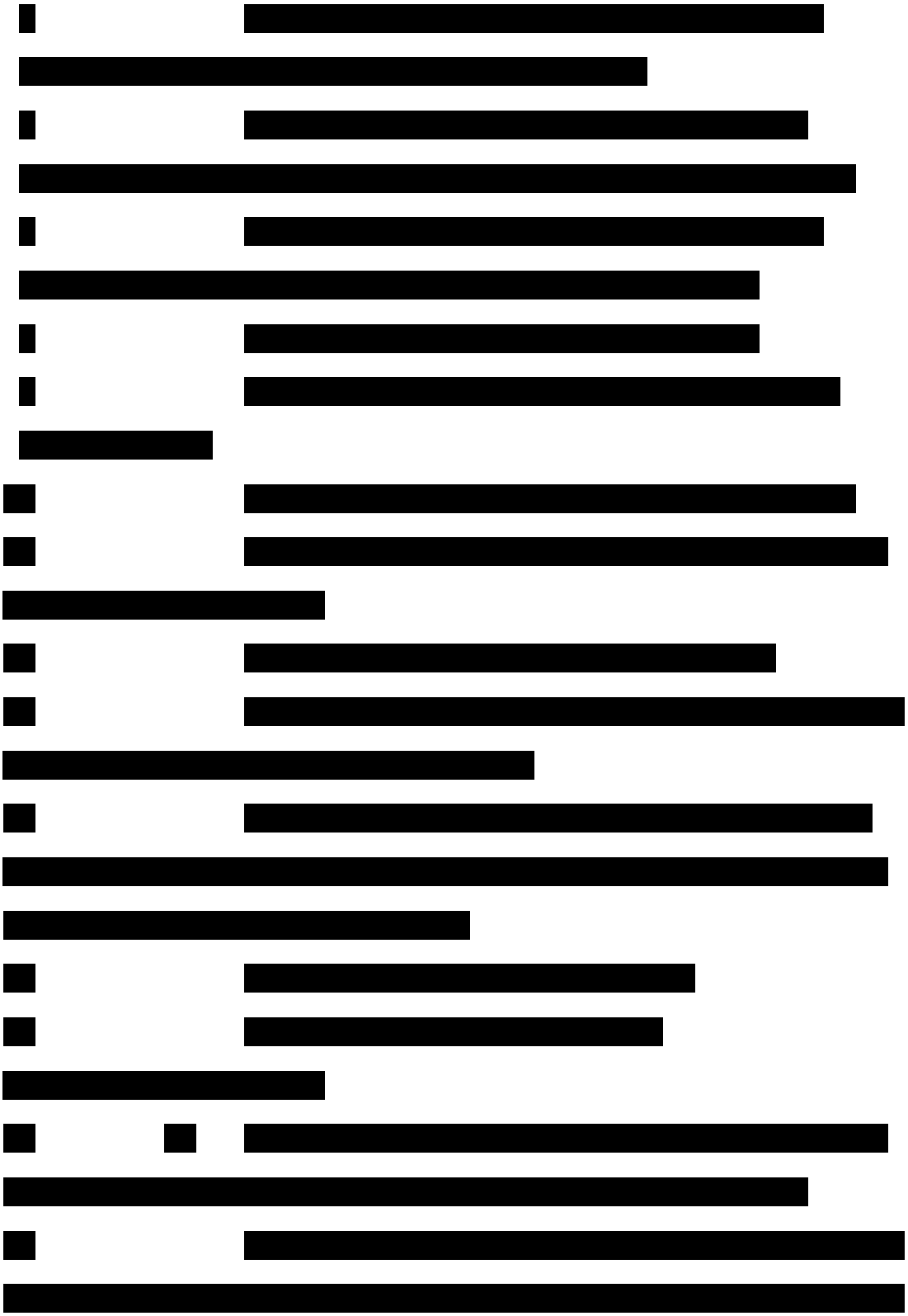


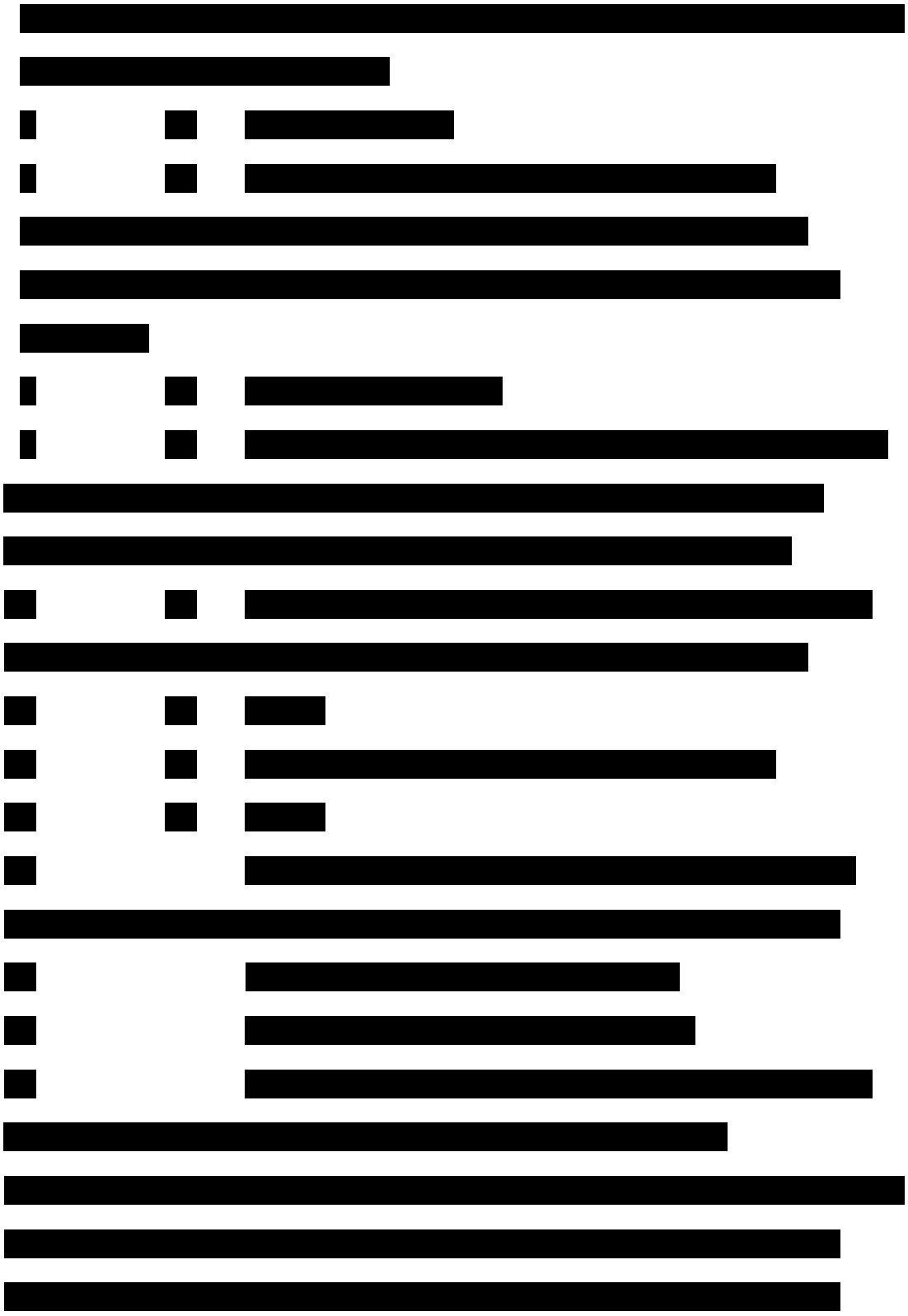


[redacted]

[redacted]

[redacted]





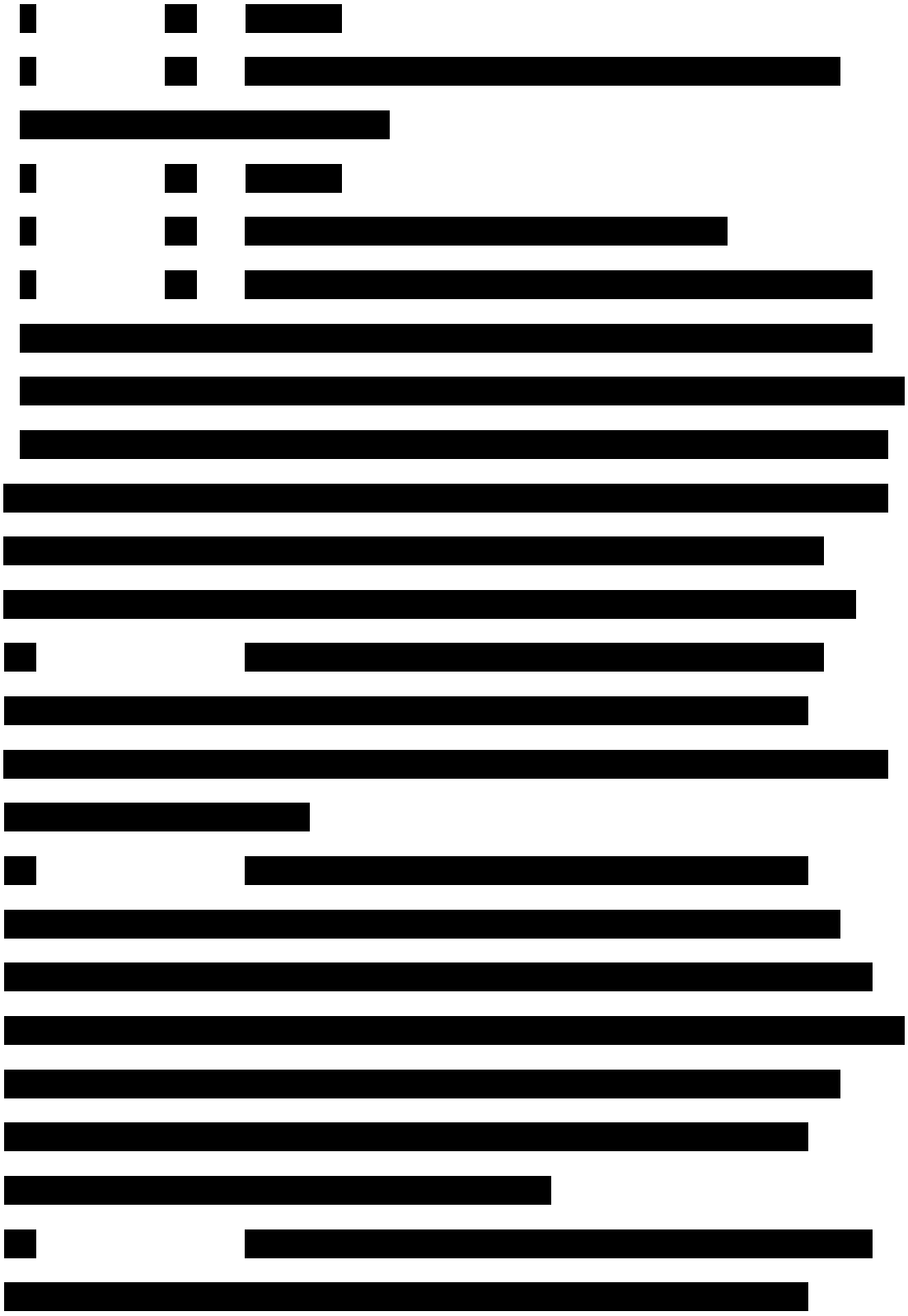
[redacted]

[redacted]

[redacted]

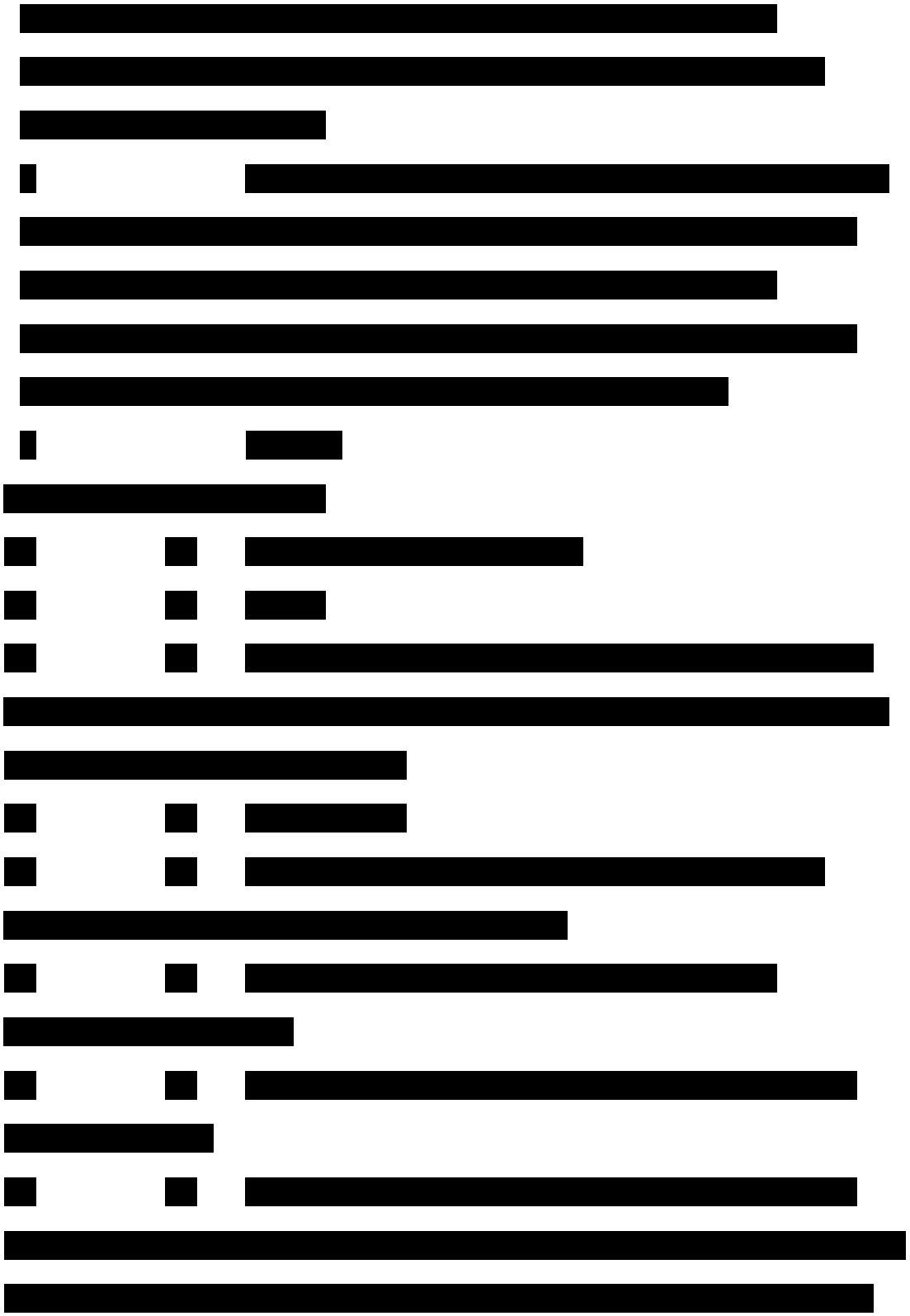
[redacted]

[redacted]



[redacted]

[redacted]



sitting here.

Q. Okay. And the second point in terms of using a single representative entity, now, that's -- that a -- a problem that Dr. Katz addressed --

A. Yes.

Q. -- in his report, didn't he?

A. He -- he addressed it, yes. I think it was in his rebuttal report.

Q. I think it was actually his initial report.

A. In his initial report, he was concerned about such things.

Q. Do you remember what Dr. Katz said about this?

A. I remember him saying that it might lead to -- no, actually I can't remember. I can't remember exactly what he said about it. I remember him talking about it.

Q. Okay, all right. Please continue.

A. So it turns out that the big effect is the adjustment for future revenues and costs. And for a very simple reason. This industry is projected to be doing very well, the interactive services industry. It's projected to be doing well in terms of not just itself growing, but also

[redacted]

[redacted]

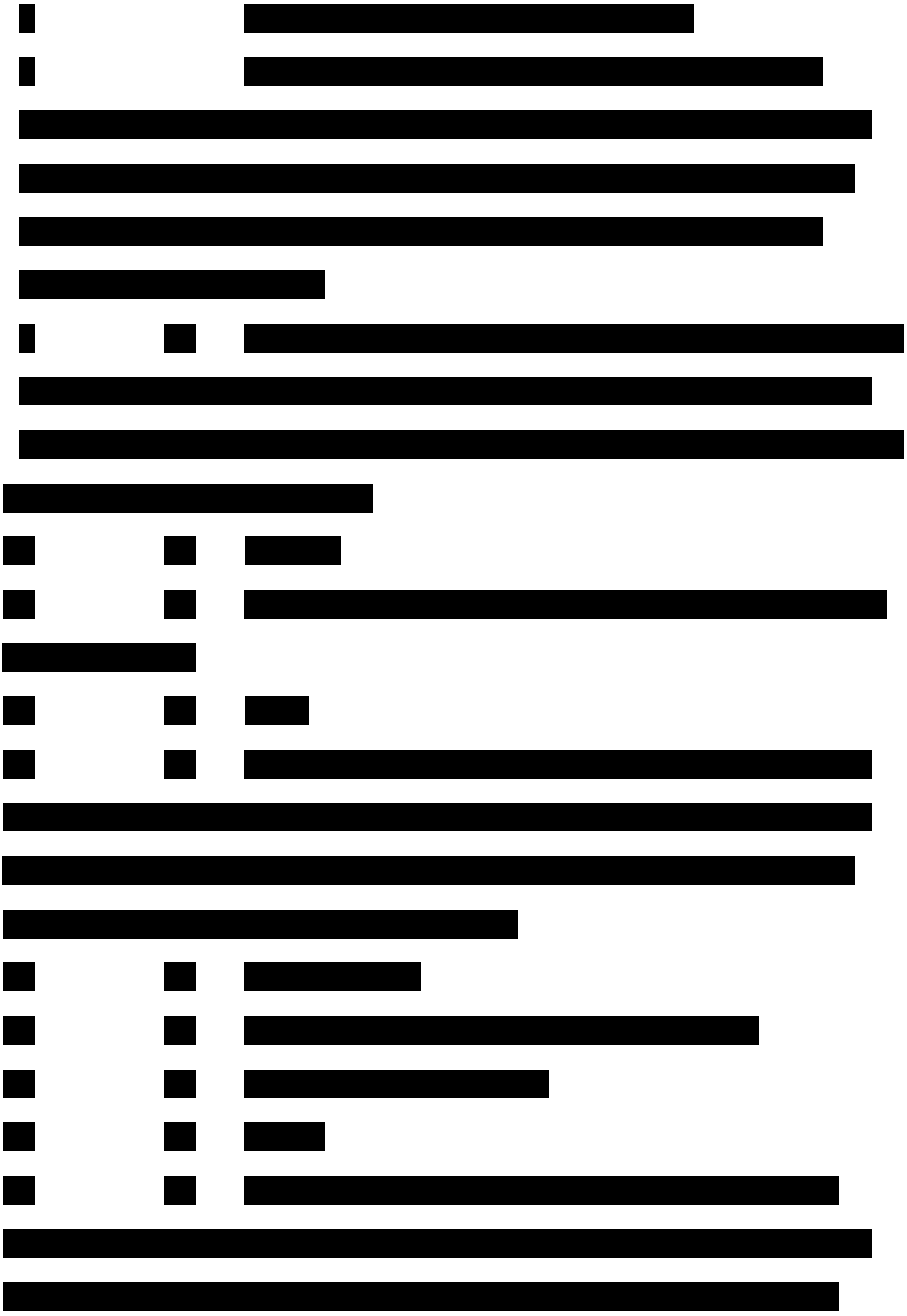
[redacted]

[redacted]

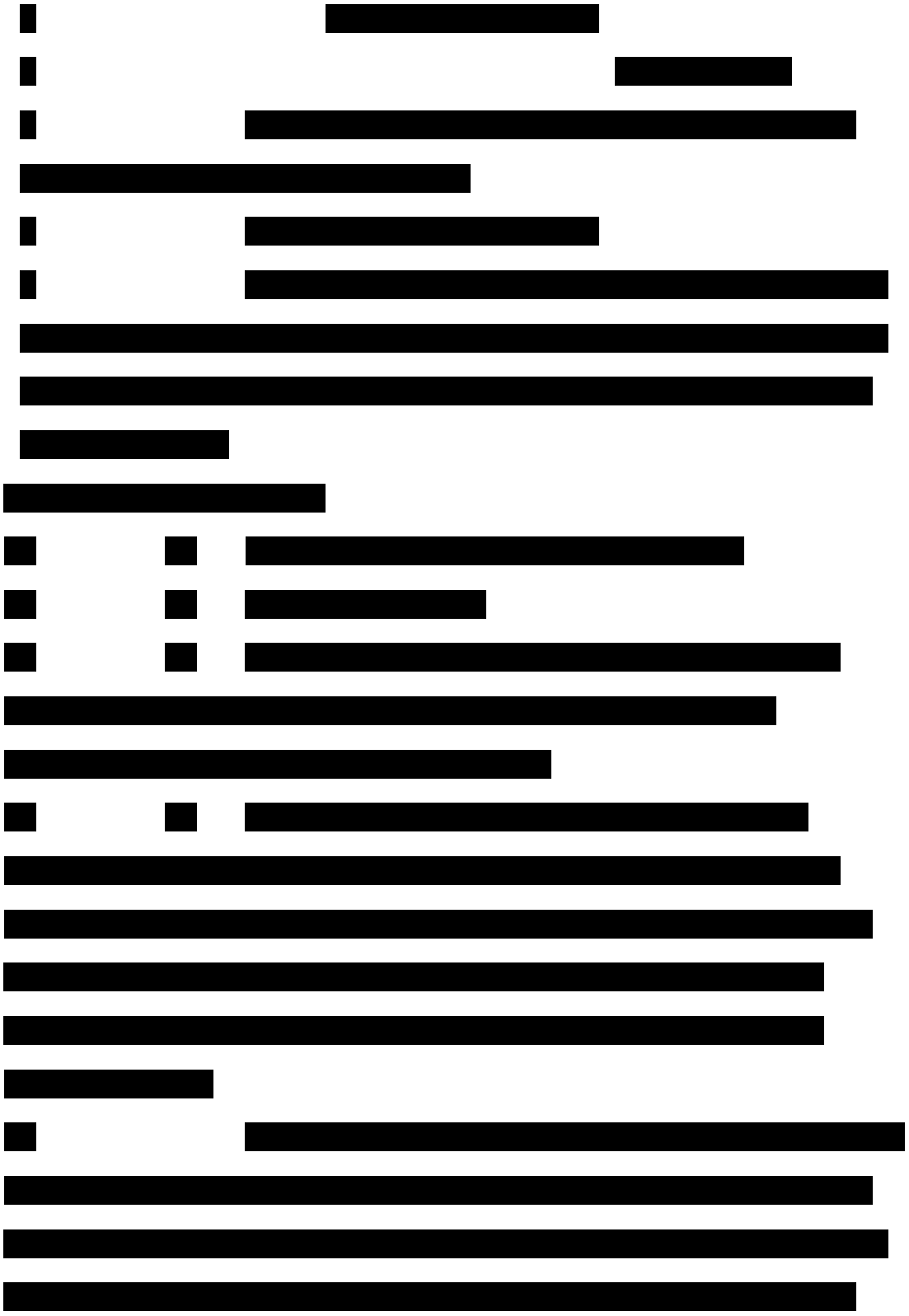
[redacted]

[redacted]

[redacted]



[redacted]

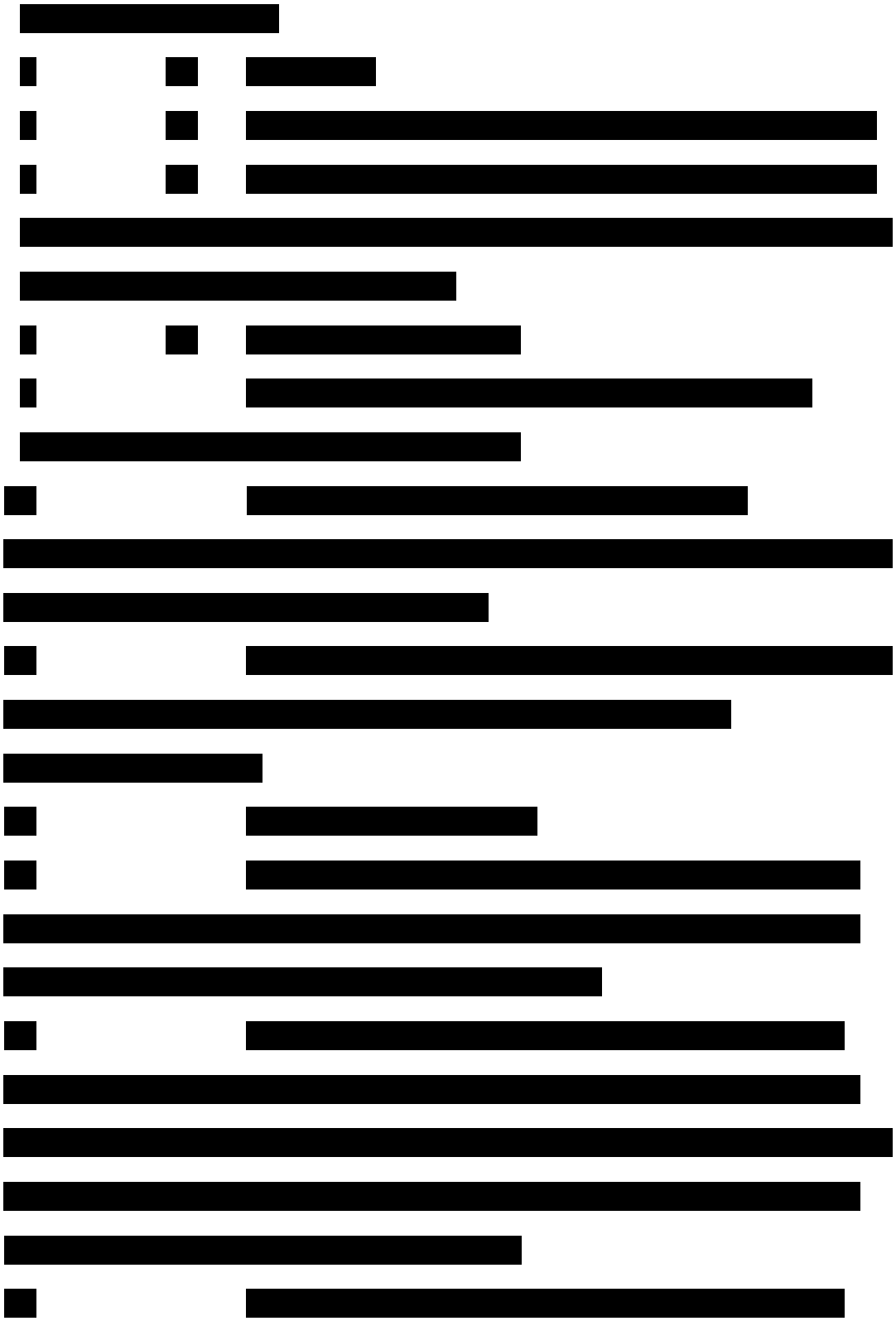


[redacted]

[redacted]

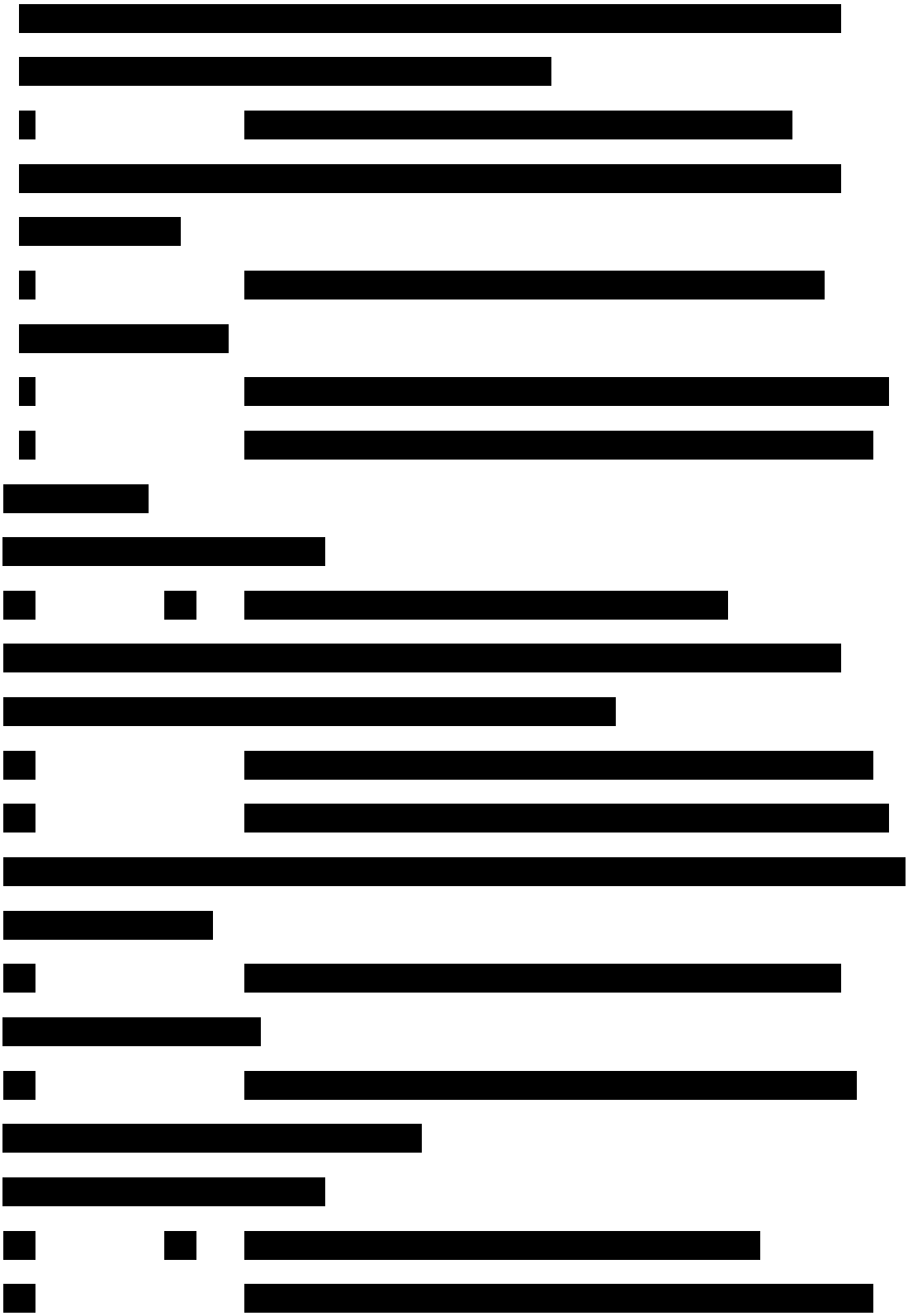
[redacted]

[redacted]

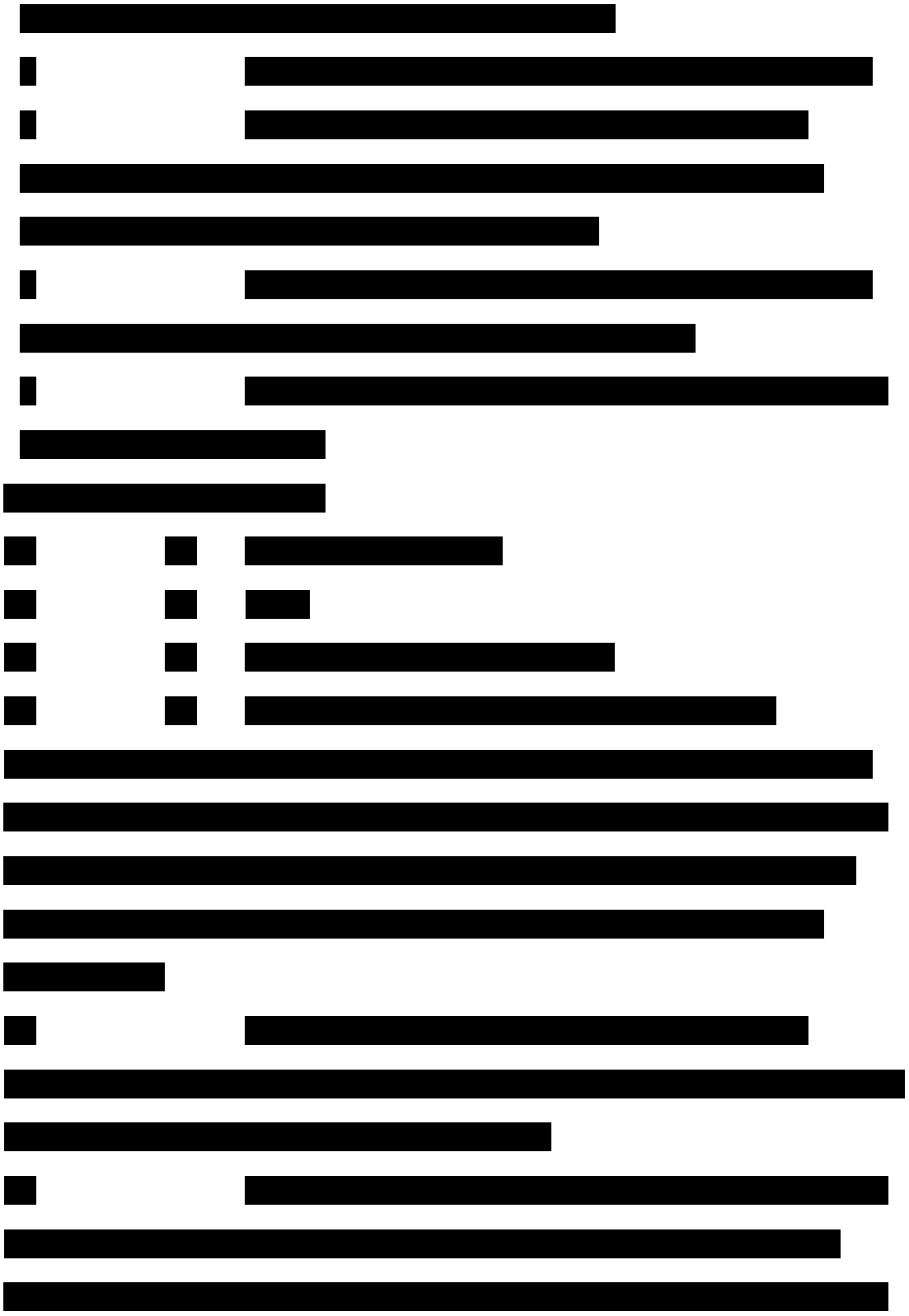


[redacted]

[redacted]



[redacted]

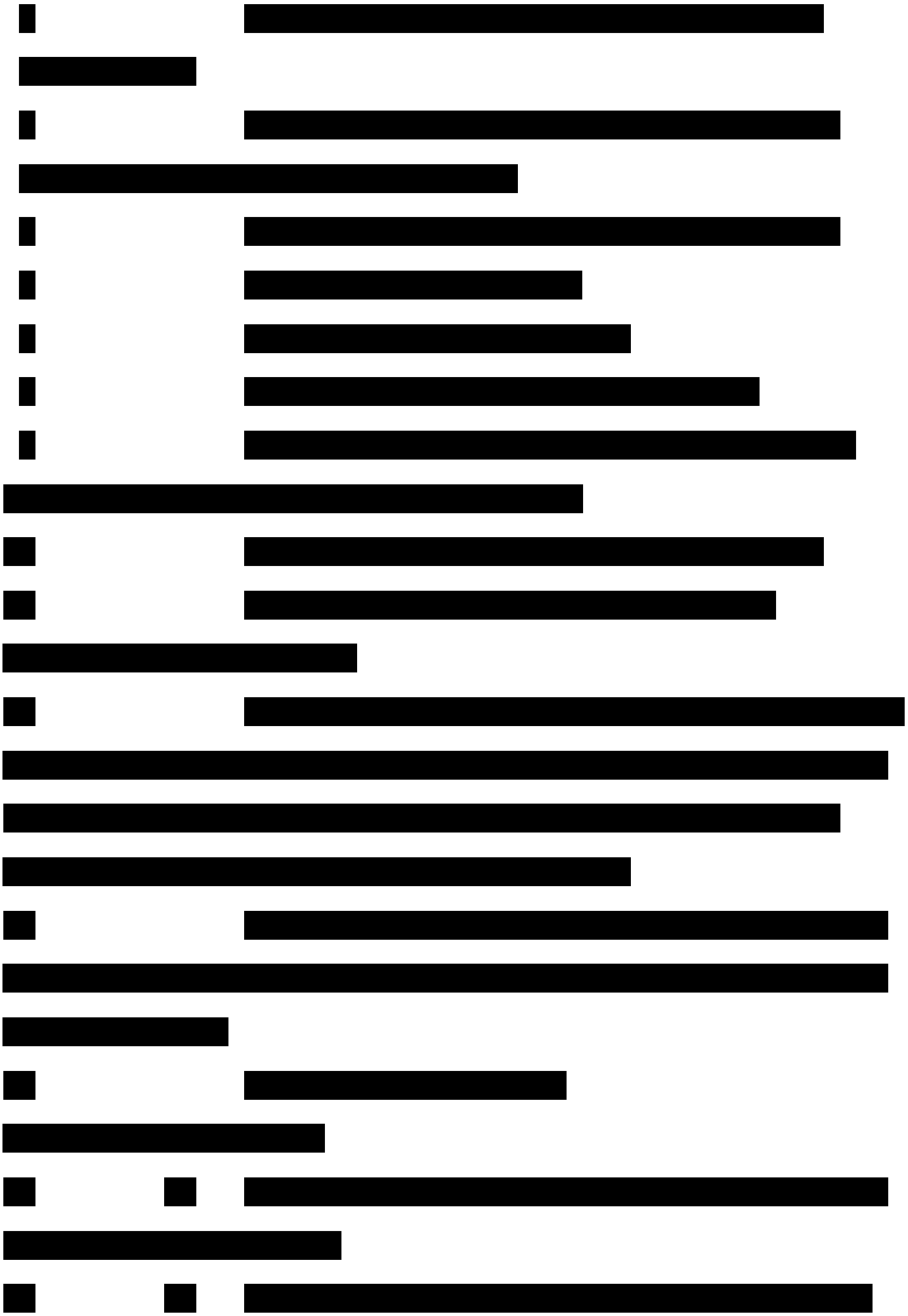


[redacted]

[redacted]

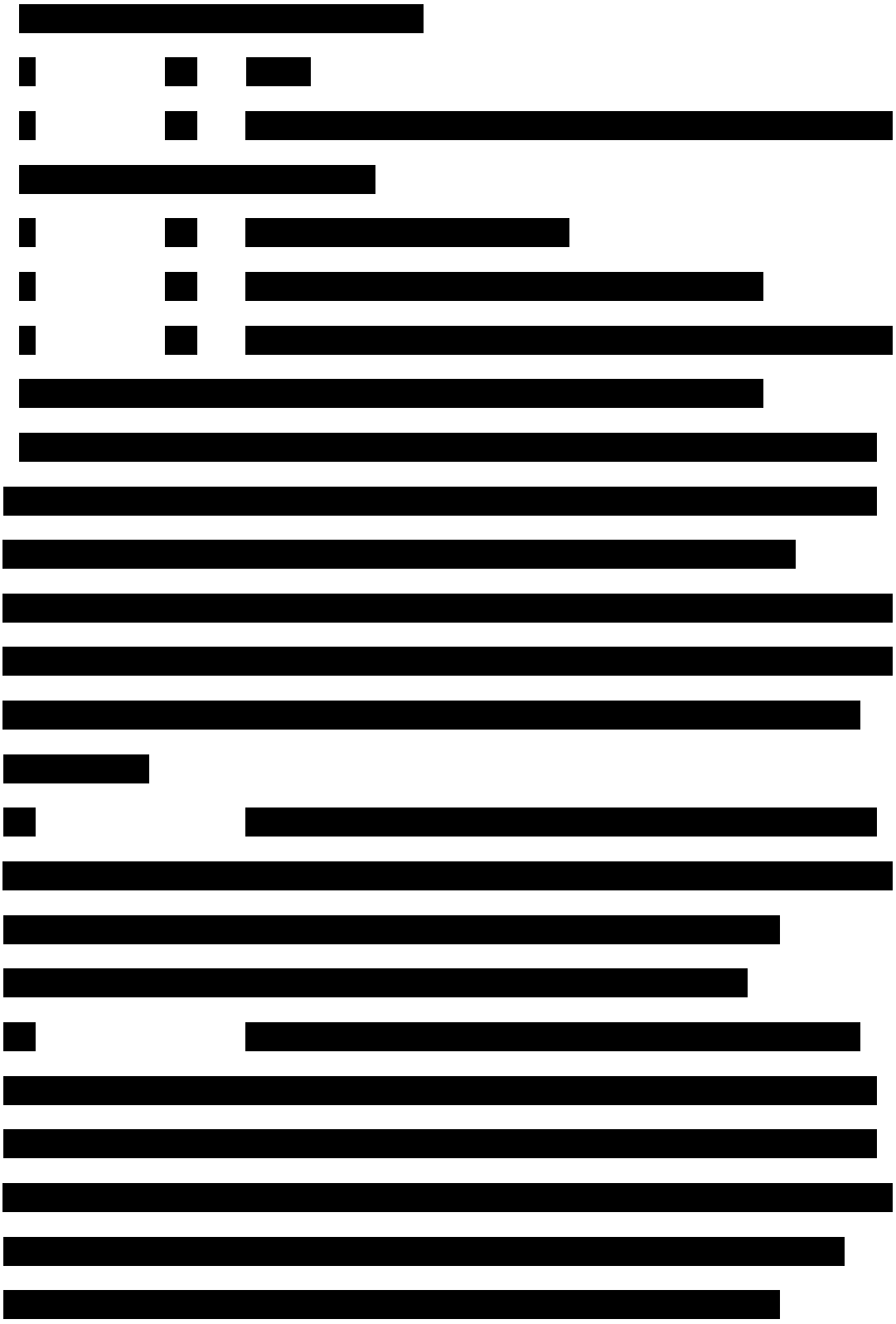
[redacted]

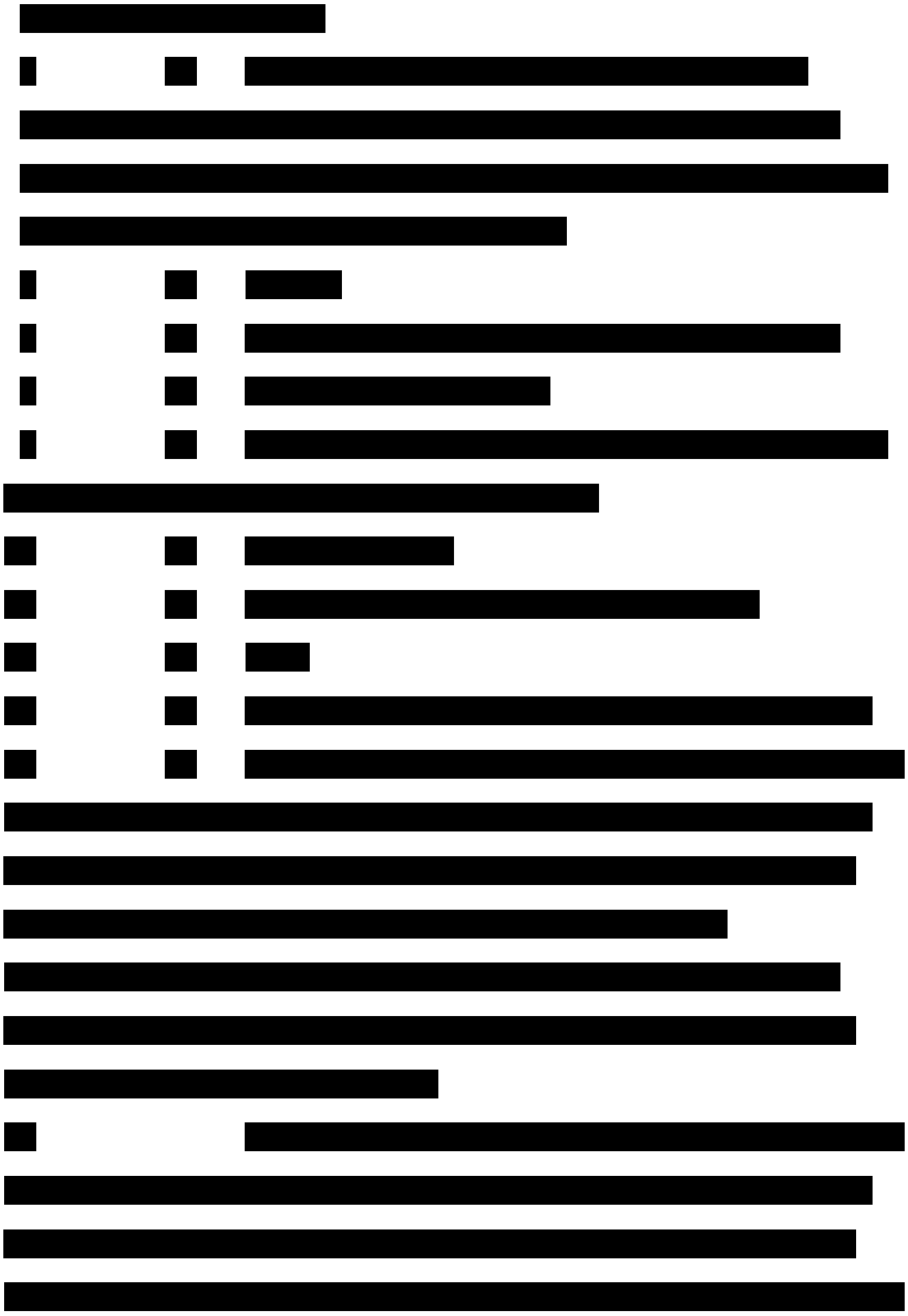
[redacted]



[redacted]

[redacted]





[redacted]

[redacted]

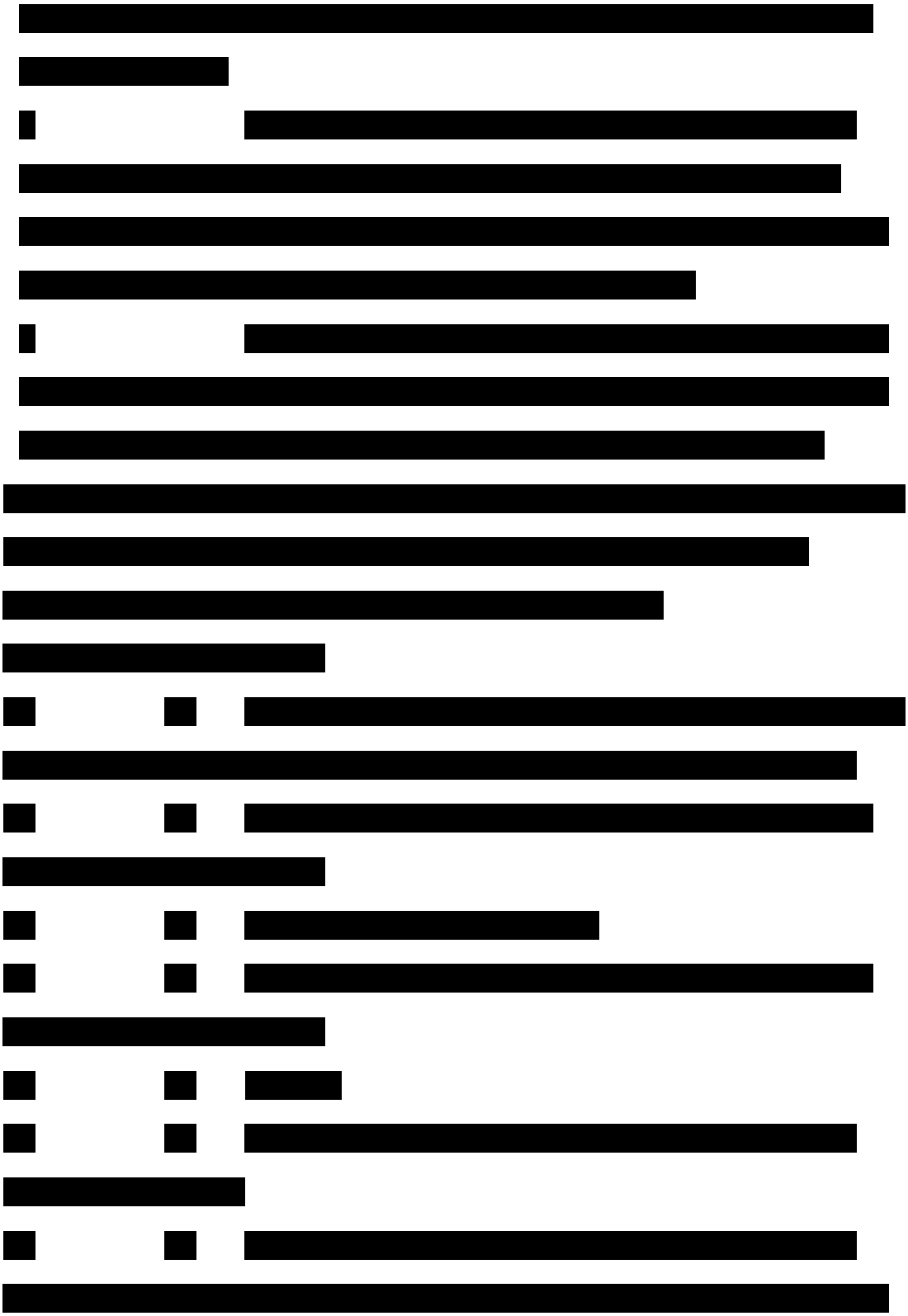
[redacted]

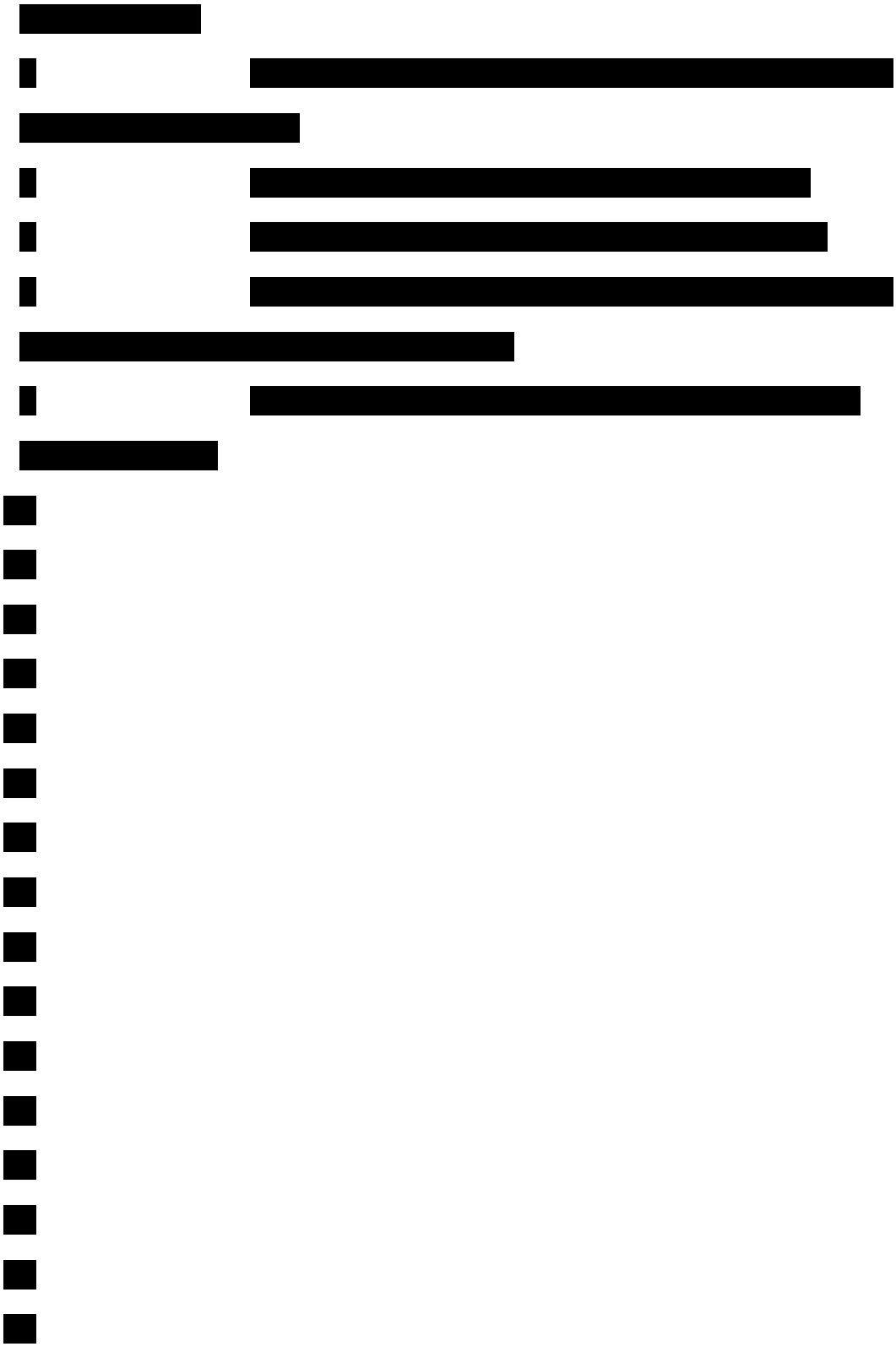
[redacted]

[redacted]

[redacted]

o





O P E N S E S S I O N

THE WITNESS: The second critique came from Dr. Ghose who said non-cooperative bargaining theory is more appropriate than the cooperative bargaining theory that the Shapley value is founded in. And by that was meant, you know, are people maximizing individual profits and so on.

I should just point out that in, in fact, you can use non-cooperative game theory, bargaining theory to provide a foundation for the Shapley value model, and I have written several papers doing just that. In fact, so much so that my explanation of the Shapley value with rock and bottom being substitutable used non-cooperative bargaining theory, in my words, rather than cooperative game theory. So I don't think that's a fair critique.

In terms of -- there was some other discussion, that was related to price discrimination. Dr. Katz argues that it is better to have a menu of royalty rates. I should note that that is kind of what the two-part, two-pronged approach of the NMPA actually is. But by that he means there should be royalty rates and you should be able to pick and choose whichever one you want.

And that can have some useful things. I

would just say as a practical matter what would go on the menu? And I am very concerned about baking in a menu for people's current preferences without taking into account the future streamers and the future available composers and other things as well in their criteria. So it just seems as a practical matter, that's harder to do.

JUDGE STRICKLER: But don't you still have the problem because you still have just a single rate, it is a menu that has just one item?

THE WITNESS: Yes.

JUDGE STRICKLER: And that, the necessity for one item may change as well over the five years, just as if you had a menu of five different alternative rates that might change over five years too?

THE WITNESS: So, it is -- it's interesting. But this item is related to use. It is related to how many people are paying or using music as opposed to what sort of people they are, what sort of plans they have to be part of.

And I guess, and as I said before, I think that provides the basis for, you know, innovation downstream. Then the only thing that it asks you to pay for is if you innovate and have

people consume more music, which sort of seems like a reasonable thing because if you are thinking about the availability of future -- not just current works but future works, which works do we want to be made available?

If we have a usage -- if the Copyright Owners are being rewarded on the basis of usage, they have got to come up with songs that get used more to get paid. You know, if they are coming up with songs and no one wants to consume them, they are not going to get paid.

And so I feel that that's a good alignment of incentives to encourage more works to be available in the future, but not just any old thing, you know. I mean I could write a song now, I could sing a song now if I had a guitar. No, I could write a song now. But that's not what we want.

We want songs to be produced who have been thinking about because I want it to be played. And we want to reward that particular thing. So I don't want them to be thinking of: Oh, I really want it to be played by not students, I get a lower rate for them, but I want it to be played by adults or something or whatever.

So it is complicated. Yeah.

BY MR. JANOWITZ:

Q. And I think you had one more.

A. Sorry, yes. Actually it is a bit related. Dr. Hubbard argues a more appropriate concept of fairness accounts for the efforts made by providers to expand the market by targeting consumers with low willingness to pay. I would agree with this critique, except for up to point of expanding the market because I have just argued for it.

But I don't see why fairness is all about targeting consumers with low willingness to pay because surely, you know, low willingness to pay means low value on music in some level.

And it is not clear to me that we want to come up with a rate scheme that is asking people to target consumers with low willingness to pay as opposed to people who really love music.

JUDGE STRICKLER: Let me ask you a question with regard to that point.

Unlike private goods, that phrase is used in economics, additional electronic versions of sound recordings, which embody, of course, the musical works.

THE WITNESS: Right.
JUDGE STRICKLER: Are sometimes considered quasi public goods. You are familiar with that phrase?
THE WITNESS: Yes.
JUDGE STRICKLER: Which basically means marginal cost equals zero, marginal physical cost equals zero, right?
THE WITNESS: Well, it is non-rival. If I consume a song it doesn't stop you, yeah.
JUDGE BARNETT: Right. Given that non-rivalry in consumption, why does attempting to target consumers with low willingness to pay interfere with a -- why is that not a preferable way to try to exploit the market?
THE WITNESS: I guess what I was objecting here, I'm not objecting to consumers with low willingness to pay finding new ways to consume music or to, you know, to make that work. I am more that I don't see how an appropriate concept of fairness leads to that directly as opposed to -- so if I came up with a musical rights scheme that allowed me to churn out a whole lot of songs that, you know, ten-year-olds who don't have much money like, and instead of like we saw the publisher

development, developing songs that might last for a longer period of time or something like that, I don't see how it is fair, obviously objecting to this use of fairness to target one sort of consumer over another.

I don't think it is fair to come up with a copyright regime, a rates regime that targets one sort of consumer. I want to come up with a rates regime that gives incentives for everybody to produce for consumers in terms of without any extra distortion.

JUDGE STRICKLER: Well, if you were able to practice hypothetically perfect price discrimination --

THE WITNESS: Yes.

JUDGE STRICKLER: -- then that would be in everybody's interest who provides music to the listeners. It would be in the interest of the services.

THE WITNESS: Yes.

JUDGE STRICKLER: It would be in the interest of the Copyright Owners and in the interest of the labels, correct?

THE WITNESS: Yes. It would increase the amount of surplus to all of them, yes.

JUDGE STRICKLER: Right. And as economists tend to point out, perfect price discrimination is impossible; is that a fair statement?

THE WITNESS: Yes.

JUDGE STRICKLER: Okay. It is impossible because you can't know the willingness to pay of every individual.

THE WITNESS: Correct.

JUDGE STRICKLER: So you need some sort of a stochastic device to be able to estimate so you have first degree price discrimination, second degree price discrimination, third degree price discrimination.

THE WITNESS: Yes.

JUDGE STRICKLER: Is it fair to say that a percentage-of-revenue pricing, because it creates a different unit price for each listener, is at least in the downstream market a form of price discrimination?

THE WITNESS: Yes, effectively it is. But remember it is not our usual form of price discrimination that's done. You know, we see it in some places but not everywhere. For instance, the classic form of price discrimination, and I think

Dr. Hubbard put up on the board was airlines, where you have got your economy and you have got your business class, right?

And you have this nice picture of those things. You know, in order to fly a plane you need jet fuel. It is essential. The jet fuel is not charged -- they don't get a different price per gallon, I guess, based on how many business class passengers versus economy class passengers they are doing. They just get one in terms of their combined physical weight.

JUDGE STRICKLER: Jet fuel is a private good, not a quasi public.

THE WITNESS: It is a private good, that's true, but remember part of what the copyright notion is is privatizing this public good. And it does so because if there wasn't that protection, you know, once a good is let loose, anyone can consume it, why would anyone pay for it?

It is explicitly there to say, to set conditions for someone to pay for a good. So while it might be statically efficient to give everybody music, thinking about the future availability of works, we know that that would likely be a bad idea.

JUDGE STRICKLER: Thank you.

BY MR. JANOWITZ:

Q. One last question, Professor Gans. Does the Shapley value reflect the relative contributions of providers?

A. It certainly is designed to do that in the sense that thinking about -- it is so granular in how it does that. It says when does a provider -- what is the contribution of a provider to each and every coalition they could find themselves in? And then weights it by the likelihood of those coalitions.

And in that sense it does so, and this is not just copyright holders in this case, this is also Services as well, recognizing their contribution. As I said, if all the Services disappear, value goes away. And that is playing a role here.

Q. Thank you.

MR. JANOWITZ: Before I turn over the witness, I would just like to enter some exhibits. We have already got his direct and rebuttal statements admitted. And I would also like to admit some other exhibits, which are to be admitted as being reasonably relied on by an expert in the same way we have done with others.

And I will identify them: Pandora Trial Exhibit 923, and Pandora Trial Exhibit 976, Pandora Trial Exhibit 977, Copyright Owners Exhibit 2592, 2676, 2682, 2683, 2727, 2738, 2747, 2760, 2762 -- these are all Copyright Owners -- 2770, 2787, 2818, and 2837. And in order not to make this interminable, 2855 through 2873.

JUDGE BARNETT: That's the list?

MR. JANOWITZ: Yes, it is.

MR. ASSMUS: Mr. Janowitz, does that match up with the binders you provided? I was going through quickly and it didn't seem to.

MR. HARRIS: It should be the sum of the binders.

MR. ASSMUS: It should be all in here?

MR. HARRIS: Yes.

MR. MARKS: I think they are being offered as materials that he relied on.

MR. JANOWITZ: That's right.

MR. MARKS: We don't object to them coming in on that limited basis, but much of it is hearsay, articles of the press and that nature, but object to them being entered for any purpose other than as evidence of what he relied on in his report.

JUDGE BARNETT: That is the purpose for

which they will be admitted.

MR. ASSMUS: No objection on that basis.

JUDGE BARNETT: Thank you. The enumerated exhibits are admitted.

(Pandora Exhibit Numbers 923, 976, 977 were marked and received into evidence.)

(Copyright Owners Exhibit Numbers 2592, 2676, 2682, 2683, 2727, 2738, 2747, 2760, 2762, 2770, 2787, 2818, 2837, 2855 through 2873 were marked and received into evidence.)

MR. JANOWITZ: Thank you very much.

JUDGE FEDER: Before you turn over the witness, Mr. Janowitz, I want to follow up on something Professor Gans said a moment ago.

In responding to one of Dr. Katz's critiques, you were opining that the use of a per-stream rate aligns well with the incentive for the Copyright Owner to produce music that more people want to listen to.

THE WITNESS: Right.

JUDGE FEDER: The per-stream rate is one prong of the proposal.

THE WITNESS: Yes.

JUDGE FEDER: The other proposal is for a per-user rate.

THE WITNESS: Right.

JUDGE FEDER: Does -- how does that fit into your response to Dr. Katz's critique?

THE WITNESS: So the per-user rate, so when you get a streaming service, obviously part of the value you get is actually by playing the songs and that value. The other part is -- and I have heard this said -- you get some value by having available songs that you might want to listen to.

And so, you know, this is the same reason we used to own, you know, collections of music. Not because we would listen to that old record all the time, but we would pull it out on some occasion. So there is an option value to having made available more works as well.

So to the extent that providing a publishers' catalogue to a service and making it available enhances that option value, it is sort of reasonable to measure that on a per-user basis, to the extent that it is helping them grow the number of users who could be listening to music.

And I think that is the rationale on that in terms of usage.

JUDGE STRICKLER: Following up on that, before Judge Feder goes to another question if he

has one there, who is responsible for creating that availability access value? Is it the service, the copyright owner, the label?

THE WITNESS: So I agree with you it is harder to come up with the simple story, as I just did of a composer thinking I want to have this song played a lot, as opposed to growing the whole service.

It might be that the publishers are themselves playing more of a role there in terms of what we heard this morning, for instance, thinking about how to grow a particular segment of music and have available and things like that.

But it is harder to -- I can recognize an option value theory, but it is harder to build a direct line precisely because it is an option value theory.

JUDGE STRICKLER: Well, before streaming, going all the way back to physical product --

THE WITNESS: Yes.

JUDGE STRICKLER: -- the availability or access value, I would go to the Tower Records and that's where the access was at.

THE WITNESS: Right.

JUDGE STRICKLER: Now the access is at

Spotify, Pandora, Apple, Amazon, Google.

THE WITNESS: Yes.

JUDGE STRICKLER: So are they providing that value to the market in the same way that Tower Records or Sam Goody was providing it before?

THE WITNESS: They are. And certainly that is a reason why this is only $1.06 per user as opposed to $19.99 or something like that because, you know, they are capturing all that value.

So to the extent that -- and they are also capturing the value that they can get from aggregating all these works together. So I don't think that's -- I don't think that's ruled out by this. I think that contribution is still recognized in that per subscriber rate or per user rate, I'm sorry.

JUDGE STRICKLER: So it is added to their surplus or coming out of their surplus?

THE WITNESS: Well, obviously they would earn more surplus if nobody had to pay Copyright Owners anything, so it is coming out of it.

But, then again, their surplus they are creating in competition with one another, the prices and everything like that, is depending on what they commonly face as costs, which includes payments to

copyright holders.

JUDGE STRICKLER: Thank you.

MR. JANOWITZ: Thank you very much.

JUDGE BARNETT: Mr. Janowitz, thank you. A propos to absolutely nothing, let me just tell you before I forget, that we have gotten approval to have the Friday hearing on the 7th, so you can contact your witnesses or do whatever it is you need to do.

We will have a 9:00 to 5:00 day. It would not hurt my feelings if we finished a little early on that day.

Mr. Assmus, are you crossing?

MR. ASSMUS: Yes, yes, I am. Thank you.

JUDGE BARNETT: Are you the sole cross examiner for the Services?

MR. ASSMUS: No, I do not believe I am, although I do believe I will be the lion's share of it.

JUDGE BARNETT: Can we begin in open session?

MR. ASSMUS: Yes. And, in fact, I will, to the extent I can, attempt to keep us in open session by asking the witness -- by asking the witness to look at things rather than display them.

JUDGE BARNETT: Thank you.

MR. ASSMUS: Although there may be times where it becomes unavoidable.

JUDGE FEDER: Mr. Assmus, will you be going back and forth between direct and cross binder or can I put this binder away?

MR. ASSMUS: I expect primarily to be using the cross binder. There is some duplication to it.

CROSS-EXAMINATION

BY MR. ASSMUS:

Q. Good afternoon, Professor Gans.

A. Good afternoon.

Q. You met me just a little over a week ago at your deposition, correct?

A. Yes.

Q. Richard Assmus on behalf of Spotify U.S.A.

Professor, I called you Dr. Gans throughout that deposition, so you will forgive me if I revert to that today.

A. No problem.

Q. I wanted to start with something that came up in Mr. Israelite's testimony. You were here for that testimony yesterday?

A. I was here, yes. I don't pretend to have paid attention to everything.

Q. Did not rivet you?

A. You know, I had other things -- yes, I am just saying that.

Q. Mr. Israelite suggested that the NMPA had some assistance from experts in crafting their rate proposal. And I understand you were not one of the experts that assisted with that, correct?

A. Yes, I didn't assist with it.

Q. The rate proposal was -- you took it as a given?

A. Yes.

Q. Now, I think you have testified today that the Shapley value method can be useful in rate setting proceedings such as this, correct?

A. Correct.

Q. Now, in doing the modeling that you have done, you don't separate between the mechanical and performance royalties paid by or paid to publishers by interactive streamers, correct?

A. We separate in the final, coming up with the final number, but everything is treated as the musical works copyright holder until that point.

Q. And, in fact, you would agree that from

the perspective of a songwriter, he or she would consider all of their streams of royalties in making economic decisions, correct?

A. Yes.

Q. Now, Judge Barnett asked you a question about performance royalties and why in your analysis, you said you did the final analysis, you held the performance royalties fixed, correct?

A. That was in the -- in the restricted version of the -- or in the -- in the Shapley, bottom-up Shapley, yes.

Q. You held the performance fixed?

A. That's right.

Q. And in your report you talk about the history of the mechanical works rate being regulated by copyright statute, correct?

A. Yes.

Q. But you in your, in what you call your restricted model, you restrict the level of all musical works royalties, correct?

A. Correct.

Q. But, in fact, not all performance royalties are subject to regulation, correct?

A. I'm not sure which -- I'm not sure of the details enough to tell you yes or no.

Q. For purposes of your analysis, did you assume that the entire musical works royalty was subject to regulation?

A. In that component of the rebuttal report, yes.

Q. And you are not aware of whether or not -- strike that.

You are aware that performance royalties for musical works are collected through various collection societies, correct?

A. Yes.

Q. Are you aware of any by name?

A. I think ASCAP, BMI, if I am not mistaken.

Q. Any others you are aware of?

A. That's it.

Q. Have you ever heard of SESAC or GMRI?

A. Yes, I have, yes.

Q. What is -- do you understand that they are also subject to government regulation?

A. I am not sure of the exact regulatory regimes on those.

Q. And it was not important for your analysis to understand whether or not each of the PROs was subject to regulation?

A. No.

Q. Is it fair to say you assumed, in connection with your economic analysis, that the performance component of a musical works royalty was constrained by regulation of some sort?

A. Really in the bottom-up analysis, we were following closely the assumptions that Dr. Marx had. So with regard to that, we made exactly the same assumptions.

Q. And the result of your analysis, correct me if I am wrong, is that the compensation currently afforded to songwriters for their musical works is depressed, correct?

A. That is -- that was the motivation, yes.

Q. If there was some aspect of the performance royalty that was not subject to regulation, why wouldn't the songwriters be capturing that today?

A. So I don't know the particular details of why that would be or of those things.

Q. Have you ever as an economist heard of the distinction between a positive and normative economic analysis?

A. Yes.

Q. And positive analysis means analyzing the world as it is; and normative analysis is analyzing

the world as it should be, correct?

A. Correct.

Q. And you would agree with me that Shapley value analysis is a normative analysis, correct?

A. Not necessarily.

Q. You wouldn't?

A. It can -- it can in certain circumstances. I have argued extensively in my research it could provide a good model for a positive analysis.

Q. It could provide a good model for a positive analysis but you would agree that in the manner in which it was presented in Lloyd Shapley's paper, it was a normative analysis?

A. I believe it was. I don't know if he made the distinction one way or another, but I haven't read it for that purpose. All I can tell you is my research into foundations of the Shapley value extending it to more realistic cases has been motivated by both positive and normative concerns.

Q. Can we have Exhibit 1722. Your Honor, this is offered solely for purposes of impeachment.

JUDGE BARNETT: Is that code for it is not in the binder?

MR. ASSMUS: It is, indeed, code for it

is not in the binder. Thank you, Your Honor.

JUDGE BARNETT: Thank you.

(Spotify Exhibit 1722 was marked for identification.)

BY MR. ASSMUS:

Q. Professor Gans, we have put before you Trial Exhibit 1722. Do you recognize this?

A. Yes. It is a working paper of a now published paper.

Q. And you are one of the authors, correct?

A. Yes.

Q. And you said this paper has been published now?

A. Yes, it is published in the Review of Network Economics. I can't remember exactly the date.

Q. Do you recall if there were any changes from the working paper?

A. I couldn't recall that either. You know, often there are between working papers and published versions, but we would have to check to see.

Q. Could you turn to footnote 12, which starts on page 10.

A. Yes.

Q. It talks about bargaining mechanisms and

an analysis that you are reviewing there.

A. Okay.

Q. Is that correct?

A. It is talking about something, yes.

Q. And if you could -- I am going to read for you the sentence starting "they also demonstrate." "They also demonstrate that this bargaining mechanism yields payoffs for agents" -- this is carryover page then -- "that are their Shapley values in the corresponding cooperative game."

That footnote is about a Shapley value analysis, correct?

A. Yes.

Q. The next sentence says, "Shapley values have long held intuitive appeal in normative work on bargaining," correct?

A. That's correct.

Q. And you characterize Shapley value in your paper as a normative analysis, correct?

A. No, I said Shapley values have long held intuitive appeal in normative work on bargaining. But as you notice, let's go straight to the introduction. The introduction is talking about real-world cases to deal with networks that are

competing that are interconnected with one another, right on the very first sentence. That's not normative.

There is not one single policy thing, if I am not mistaken, in this paper at all, except for some assertions about what integration might do to the level of downstream competition.

Q. That's not the question I asked. The question I asked is isn't it true that in footnote 12, you characterized Shapley value analysis as normative?

MR. JANOWITZ: Objection, asked and answered.

JUDGE BARNETT: Sustained.

BY MR. ASSMUS:

Q. Now, you have used some terms in, so far today, bottom-up versus a top-down approach to Shapley?

A. Yes.

Q. Those are words you coined, correct?

A. Yes, to try and explain the different approaches in this matter.

Q. Those aren't terms of art in the field of economics?

A. No. They are not terms of art and nor

should you read in any normative properties of top better than bottom or vice versa.

Q. And you, in particular, you refer to Dr. Marx's Shapley approach as a bottoms-up approach, correct?

A. Correct.

Q. And your original Shapley inspired analysis is a top-down approach, correct?

A. That's right.

Q. By the way, your top-down approach, it wasn't a fully specified Shapley model, was it?

A. No, it wasn't.

Q. Now, we call it a Shapley analysis because it was based on a paper written by Lloyd Shapley, correct?

A. It is being named after him. He did not name it the "Shapley value" in that paper.

Q. No, I wasn't accusing him of ego. It was named after the fact a Shapley analysis based on his paper, correct?

A. Correct.

Q. And using your terms of bottom-up and top-down, in fact, the analysis in Shapley's own paper was a bottom-up approach, similar -- strike that.

The analysis in Shapley's seminal paper was what you would call a bottom-up Shapley approach, correct?

A. So I don't think we would call it either of those. It was a theoretical approach. When I use the terms top-down versus bottom-up, it was -- it was merely to describe where the data was coming from.

Professor Marx's analysis, she got data right from the bottom, very detailed, and then constructed the Shapley from that.

I, on the other hand, took some high-level aggregate profits and then used the Shapley value to motivate a relationship between that and some benchmarks. That's -- that's really -- I mean, we can look at Shapley's original paper, I know it is here, but I don't think that's of relevance.

Q. Would you agree that the original Shapley analysis was closer to a bottom-up approach?

A. No.

Q. You recall, in fact I mentioned at the beginning, I took your deposition just last week, correct?

A. Yeah.

Q. If we could take a look at the transcript of that deposition.

JUDGE FEDER: Is that in the binder?

MR. ASSMUS: It is not in the binder. We're going to hand it to you shortly.

THE CLERK: It will be 1726.

(Spotify Exhibit 1726 was marked for identification.)

BY MR. ASSMUS:

Q. Professor Gans, it is being handed to you. If you could turn to page 264. And, Your Honor, Judge Barnett, you had asked this question before. This deposition transcript is marked restricted. I am not asking you to close the courtroom, not going to show any truly restricted materials.

JUDGE BARNETT: Thank you.

BY MR. ASSMUS:

Q. Are you there?

A. I am.

Q. Professor Gans, page 264, line 3.

"Question: Did the Seminole" -- it should be seminal, that was a super transcription error.

"Did the seminal Shapley paper describe a

top-down or bottom-up approach to Shapley value methodology?

"Answer: It described -- it didn't describe any approach to doing it in reality. It provided -- that's a good question. How would we characterize it? Well, the Shapley value computation itself says you take values of the characteristics function, which basically I guess it would be closer to, if you had those values, it would be closer to a bottom up approach if you're computing it that way, but I don't think there was no discussion in there whatsoever about what the best way to do that would be."

Did I ask you that question?

A. Yes.

Q. Did you give that answer?

A. Yes.

Q. So I want to talk a little bit about your first -- your direct report.

A. Yes.

Q. In which you do, is it fair to say, a Shapley-inspired analysis, if it wasn't a Shapley model?

A. That's fair enough.

Q. Shapley light?

A. Yes.

MR. JANOWITZ: Objection to the characterization.

THE WITNESS: It was a -- it was a Shapley-inspired analysis.

JUDGE BARNETT: Overruled.

MR. JANOWITZ: Shapley light.

JUDGE BARNETT: That's what he says, Shapley light.

BY MR. ASSMUS

Q. L-i-t-e, Lite.

A. Well, Shapley zero.

Q. Diet Shapley. So if I understand that correctly, you took the -- what might be determined from a Shapley modeling exercise that the Shapley value of the labels and publishers should be equal, correct?

A. That was, that would be the conclusion of the Shapley modeling. It is a conclusion of all the Shapley modeling exercises in this matter.

Q. And from that you derive a ratio of sound recording royalties to musical works royalties, correct?

A. Correct.

Q. And then you apply that ratio to an

estimated per-play and per-user royalty for sound recordings, correct?

A. Correct.

Q. And I ask you, please, not to identify that number but that number was given to you by your counsel, correct?

A. You mean the final per-play number for musical works?

Q. No, the input into your Shapley light analysis.

A. For the one for sound recordings?

MR. JANOWITZ: Objection. I think that we're really doing something of a disservice to the record at this point by talking about numbers that are used with other numbers when we don't know what numbers they are.

And I understand we could keep the courtroom open, but I am troubled by this.

JUDGE BARNETT: I think we will all be able to follow more closely if we can deal with the reality, so we will have a short period of restricted material.

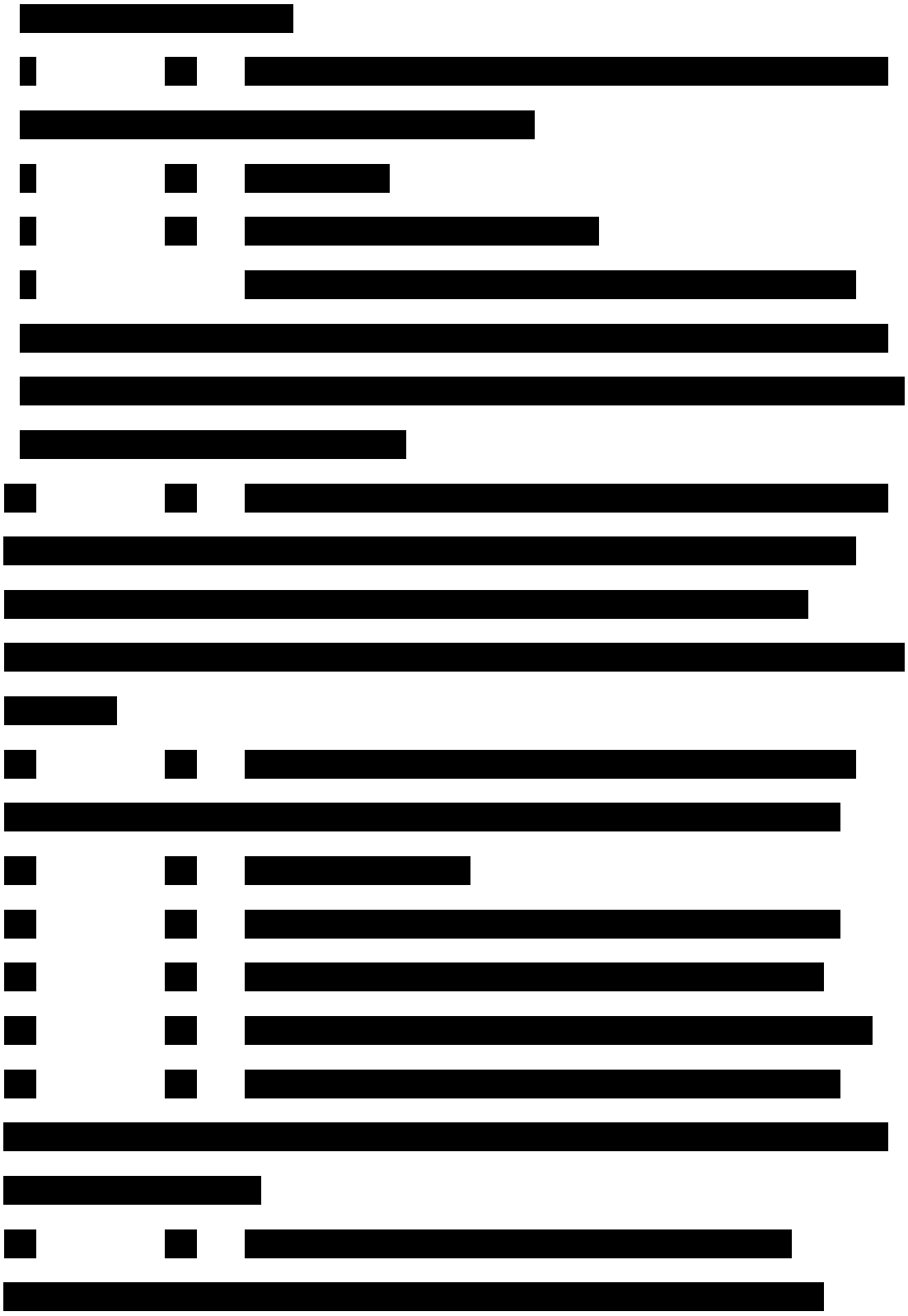
So if you don't have authority to hear this restricted material, please wait outside.

(Whereupon, the trial proceeded in

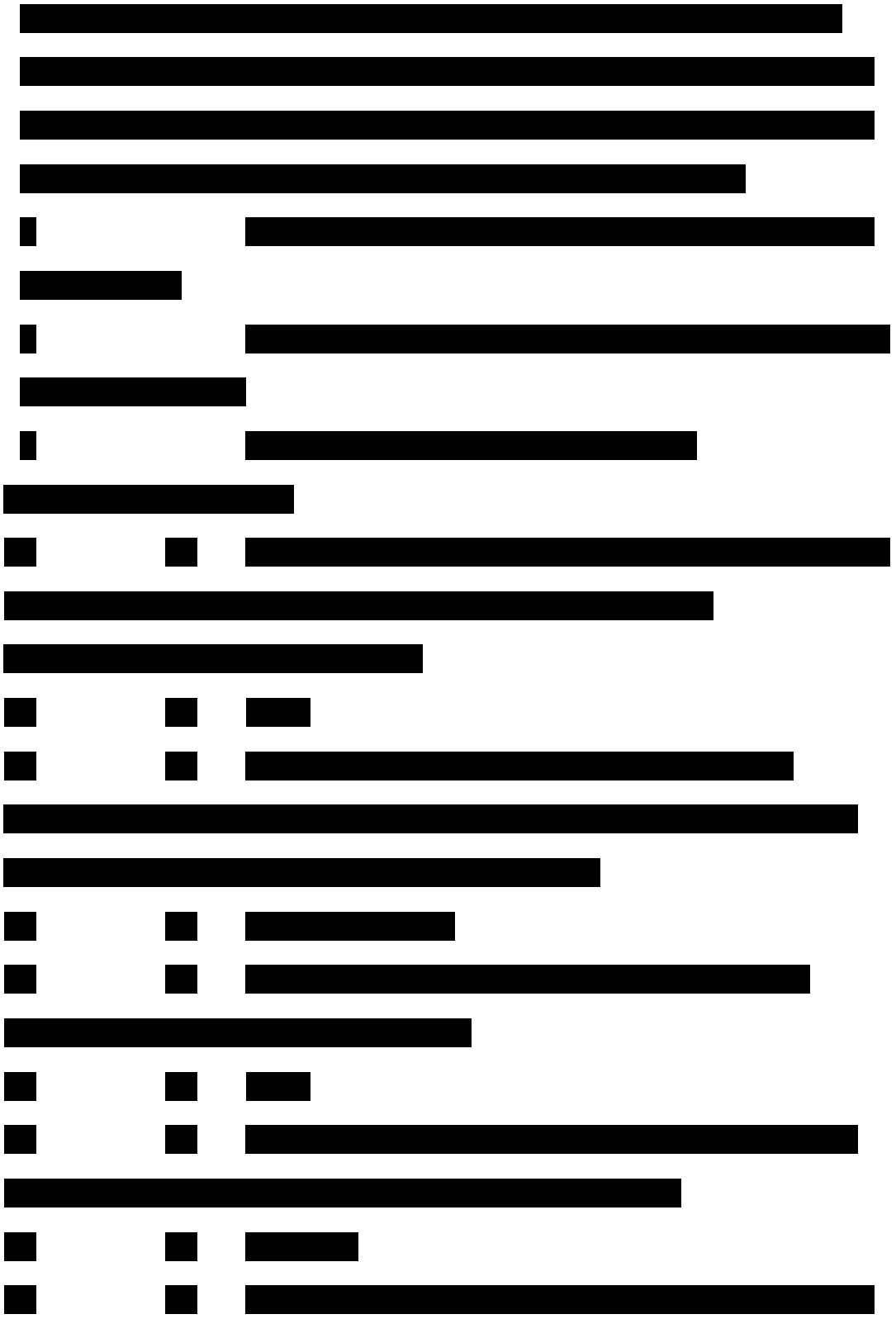
confidential session.)

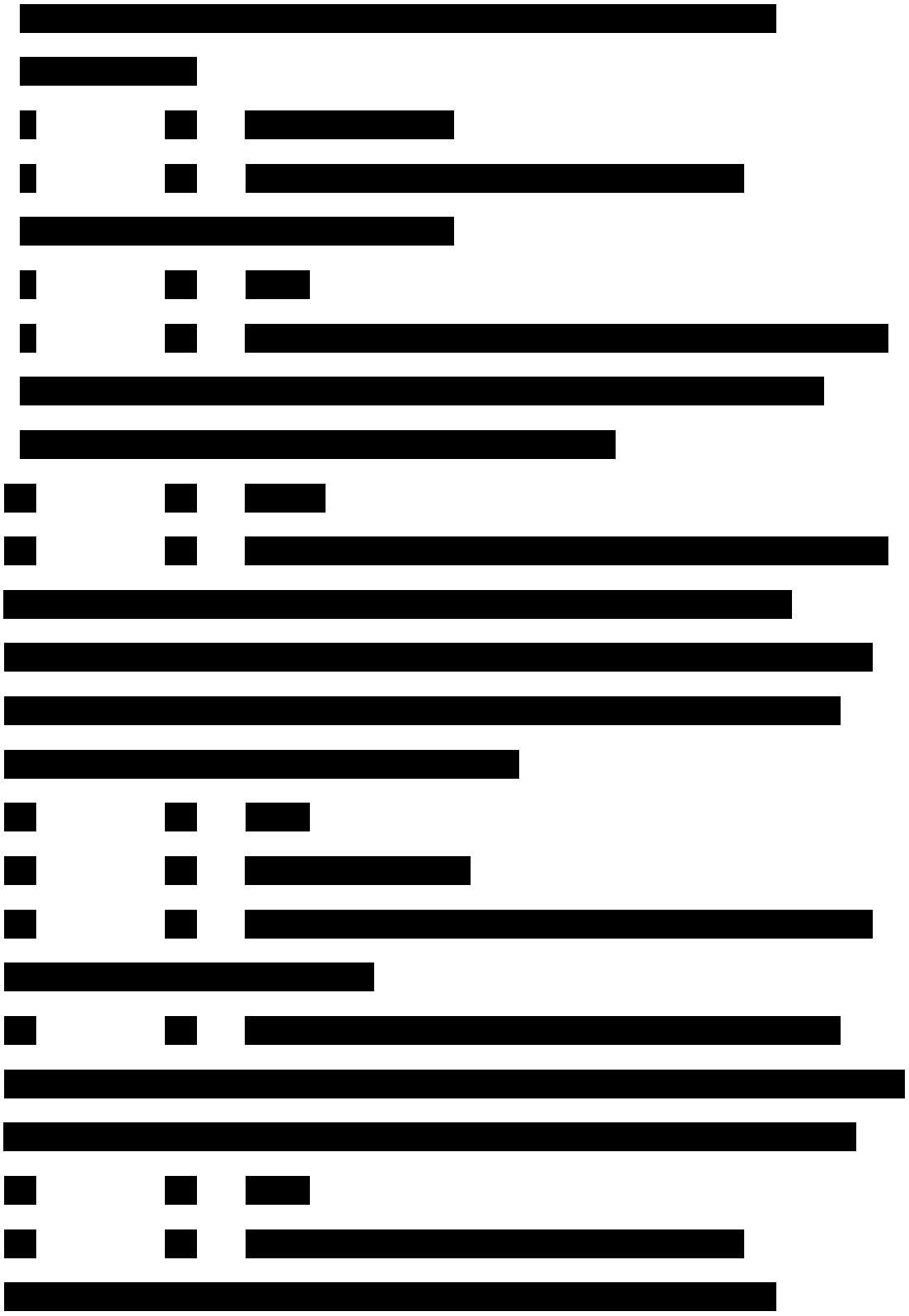
1 C O N F I D E N T I A L S E S S I O N

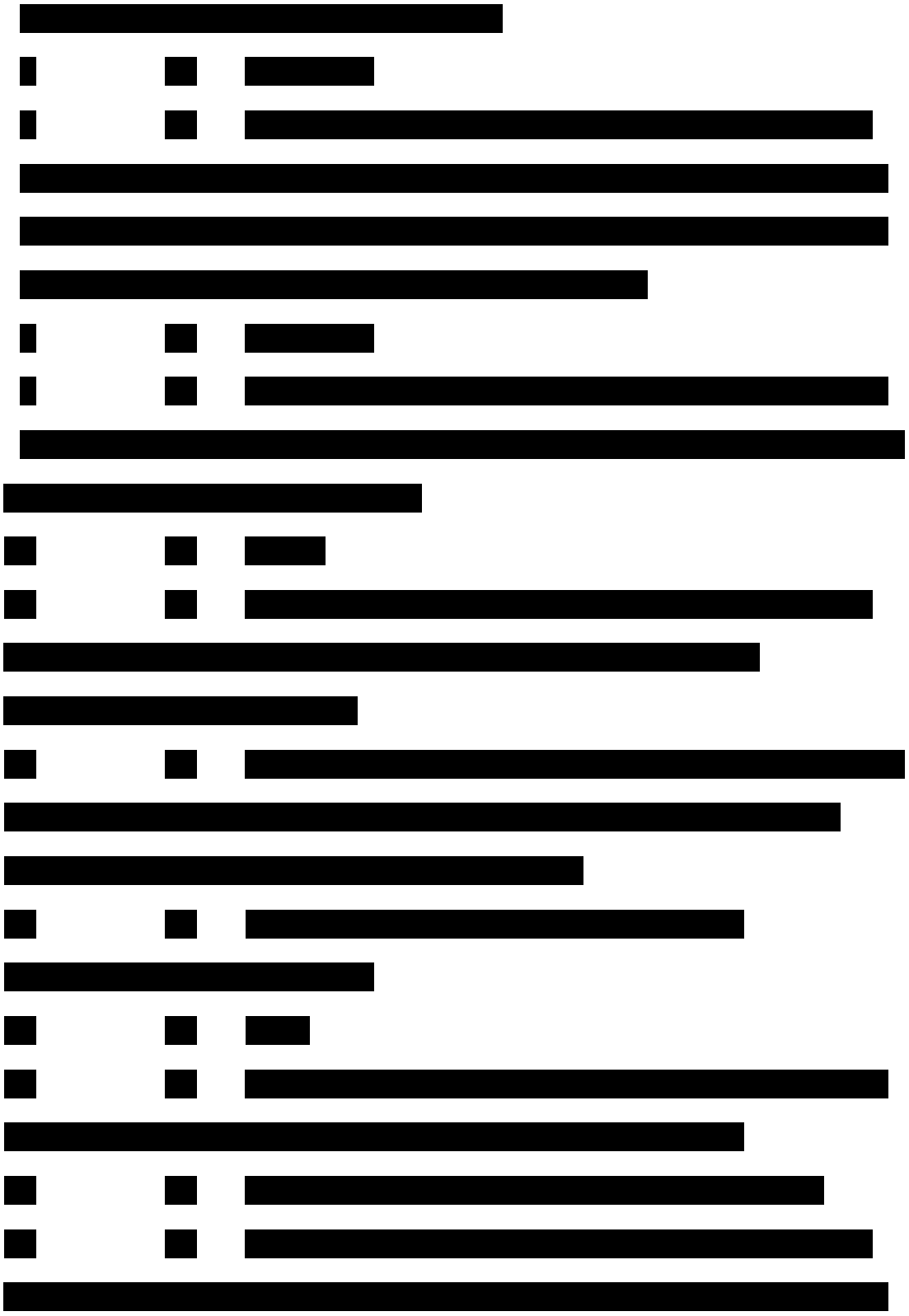
[redacted]

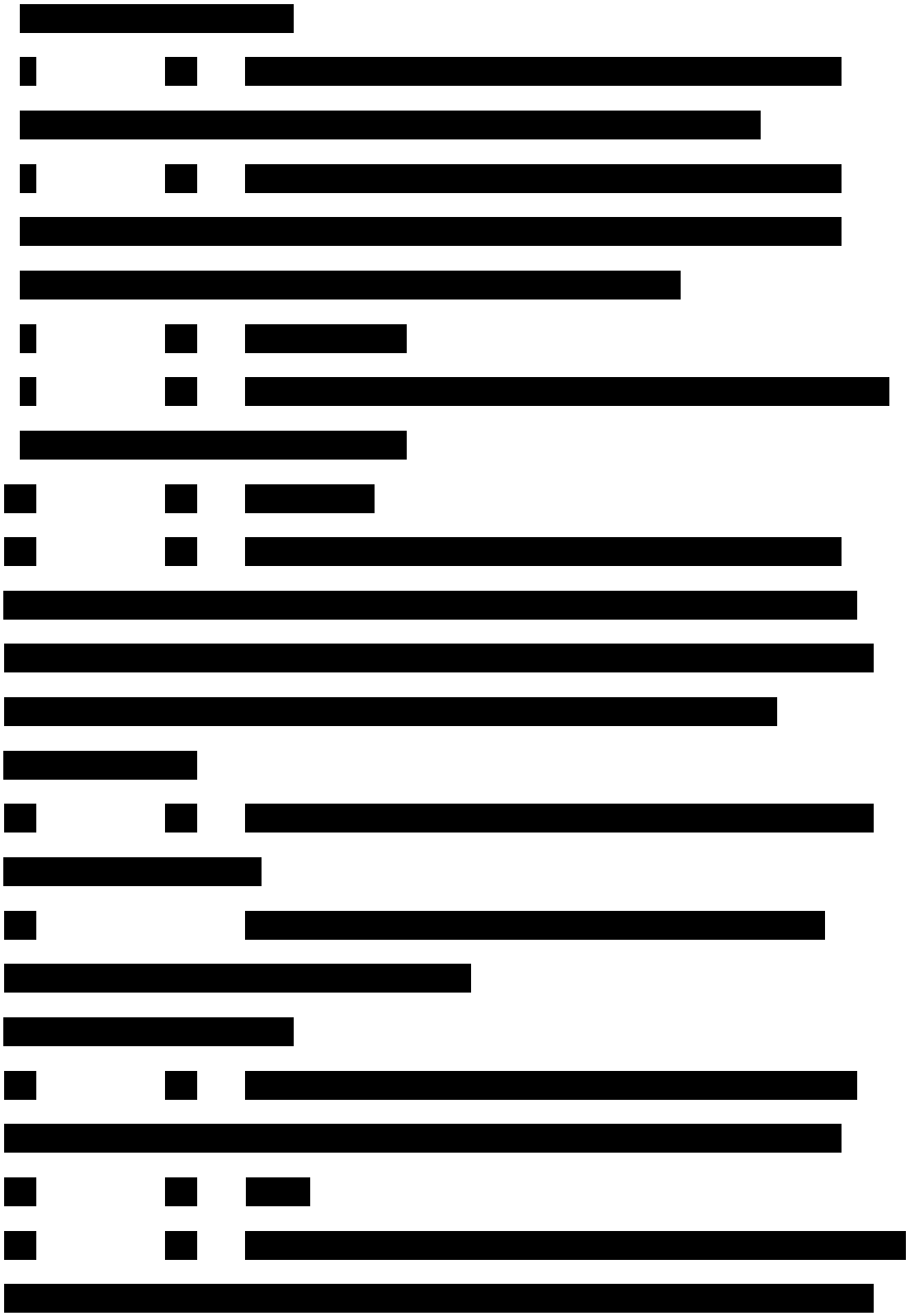


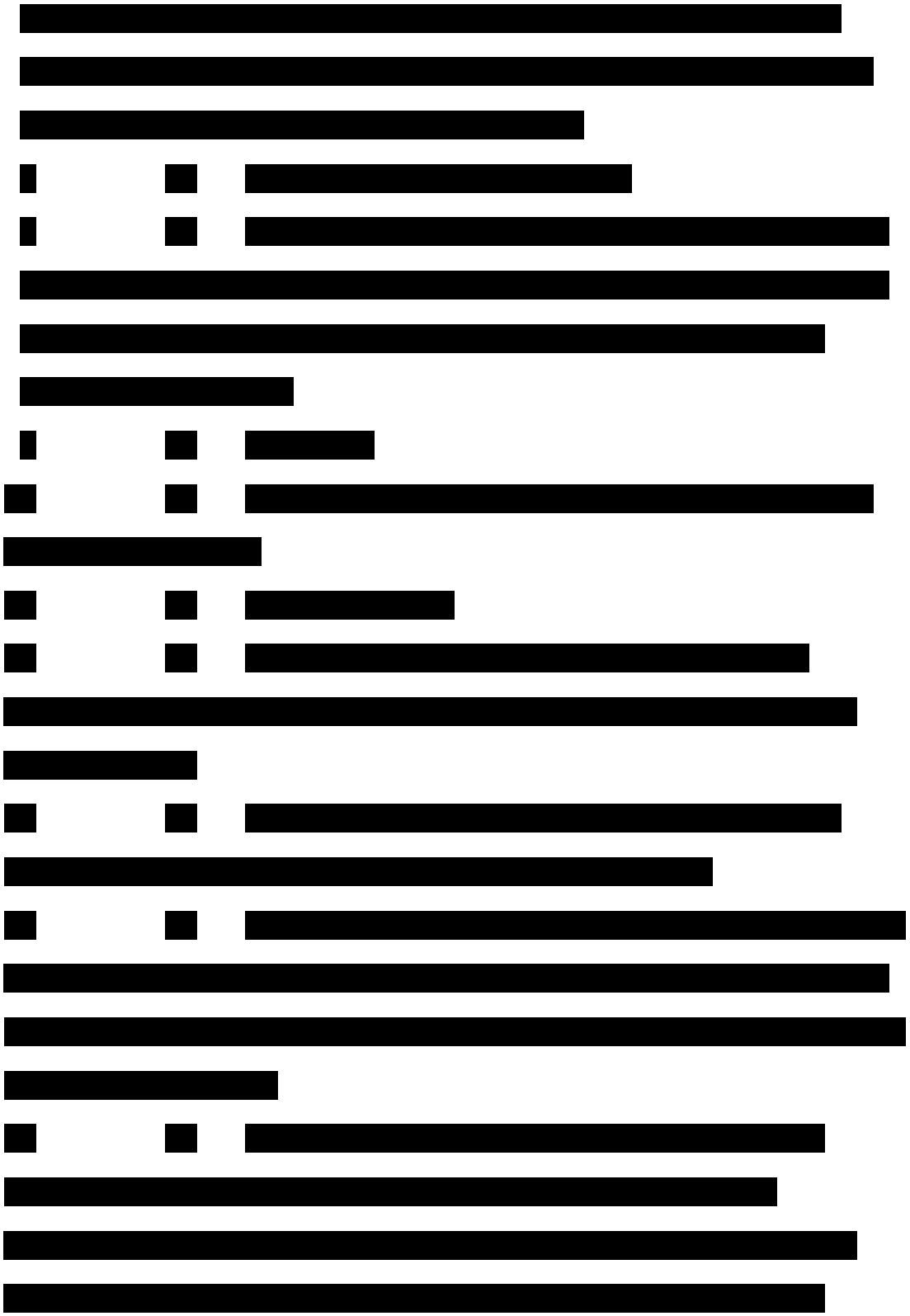
[redacted]



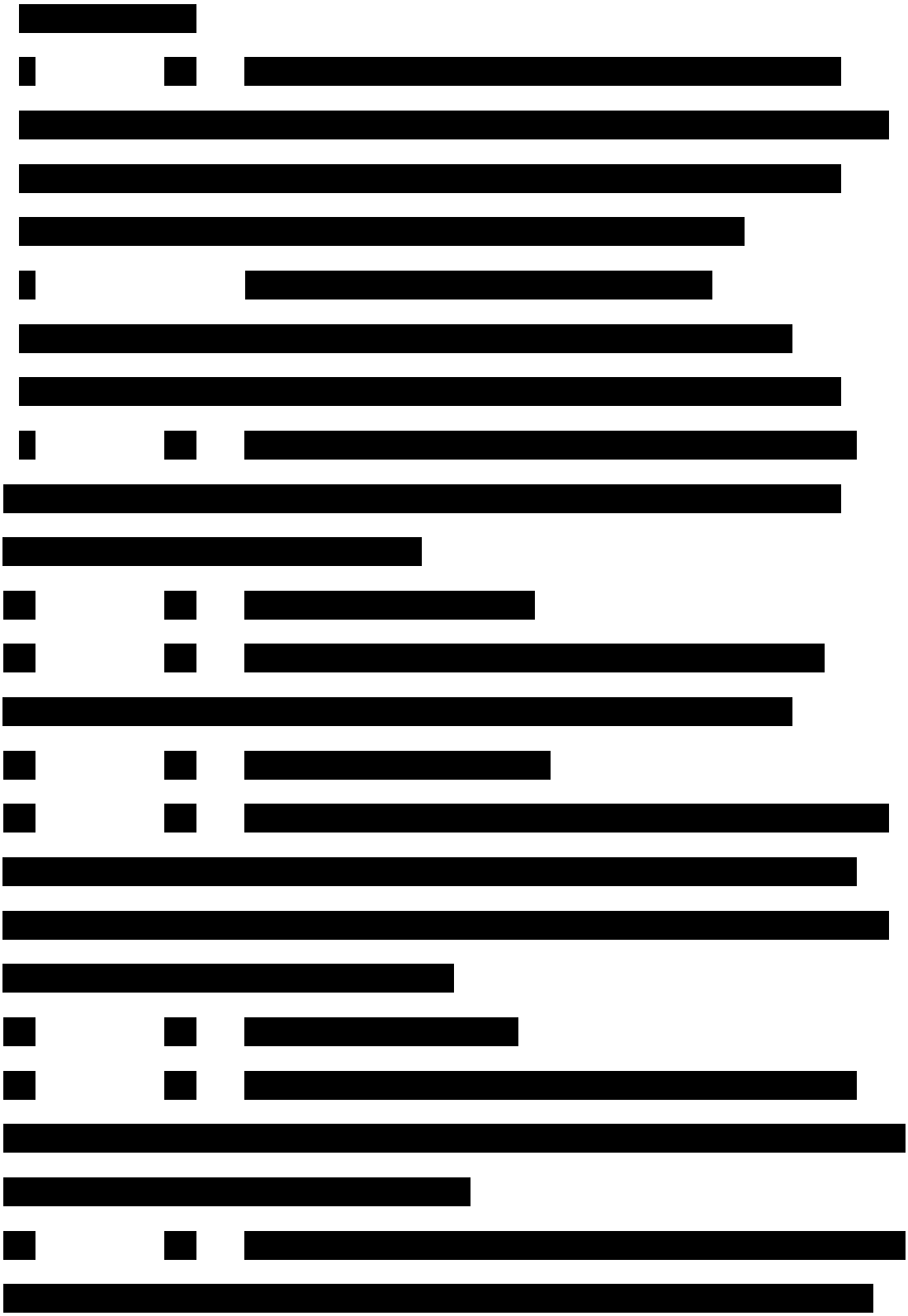




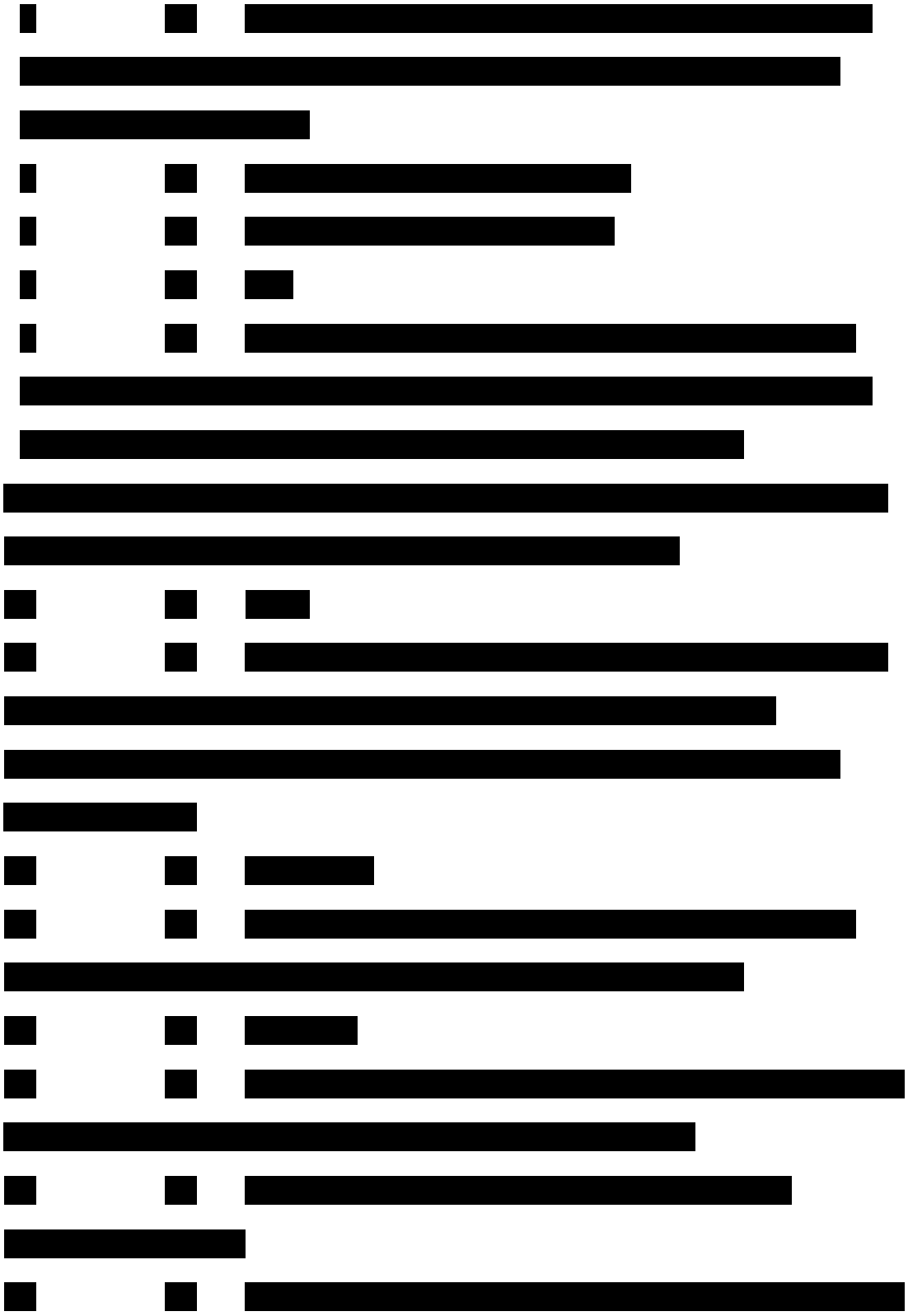


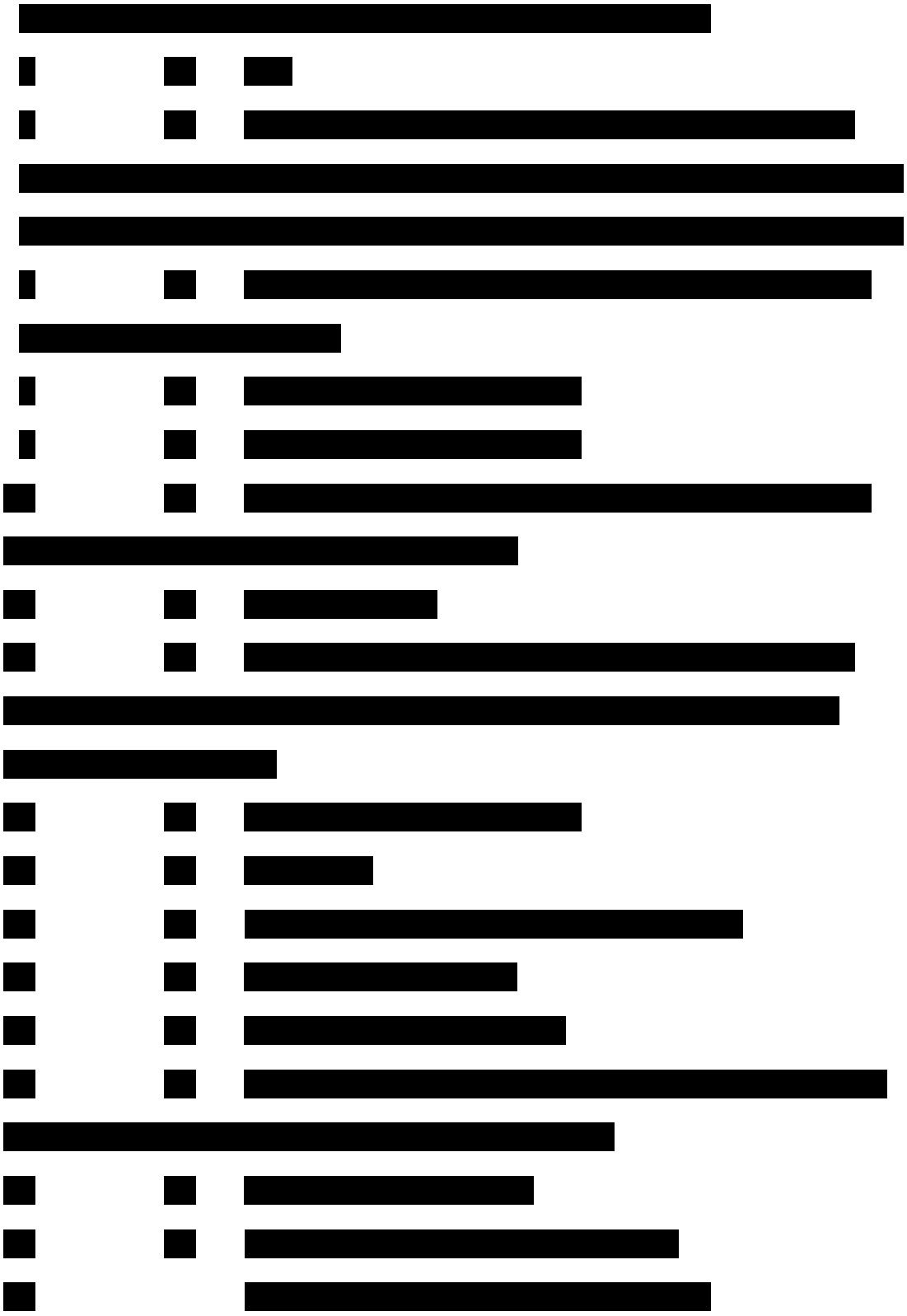


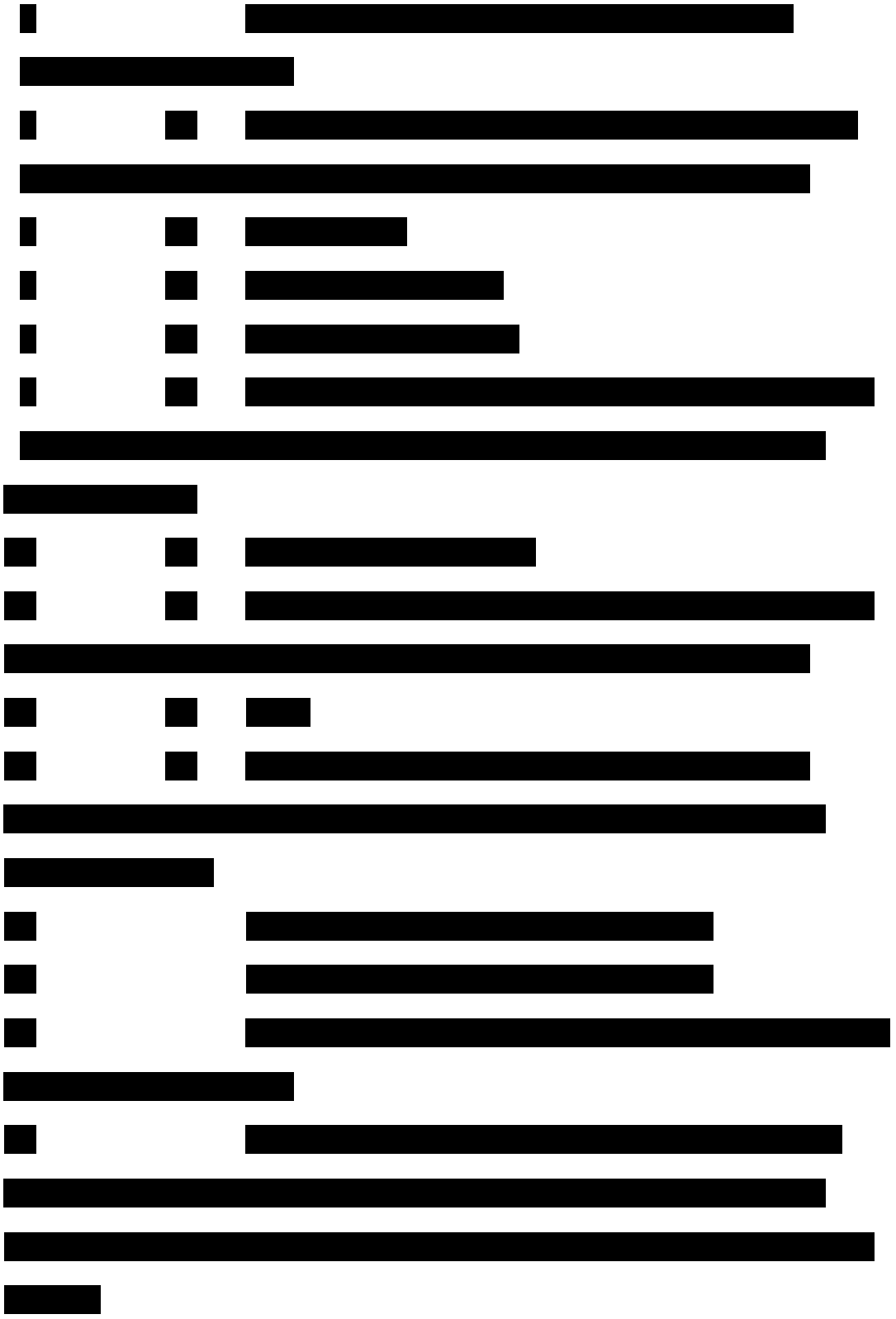
[redacted]



[redacted]







[redacted]

[redacted]

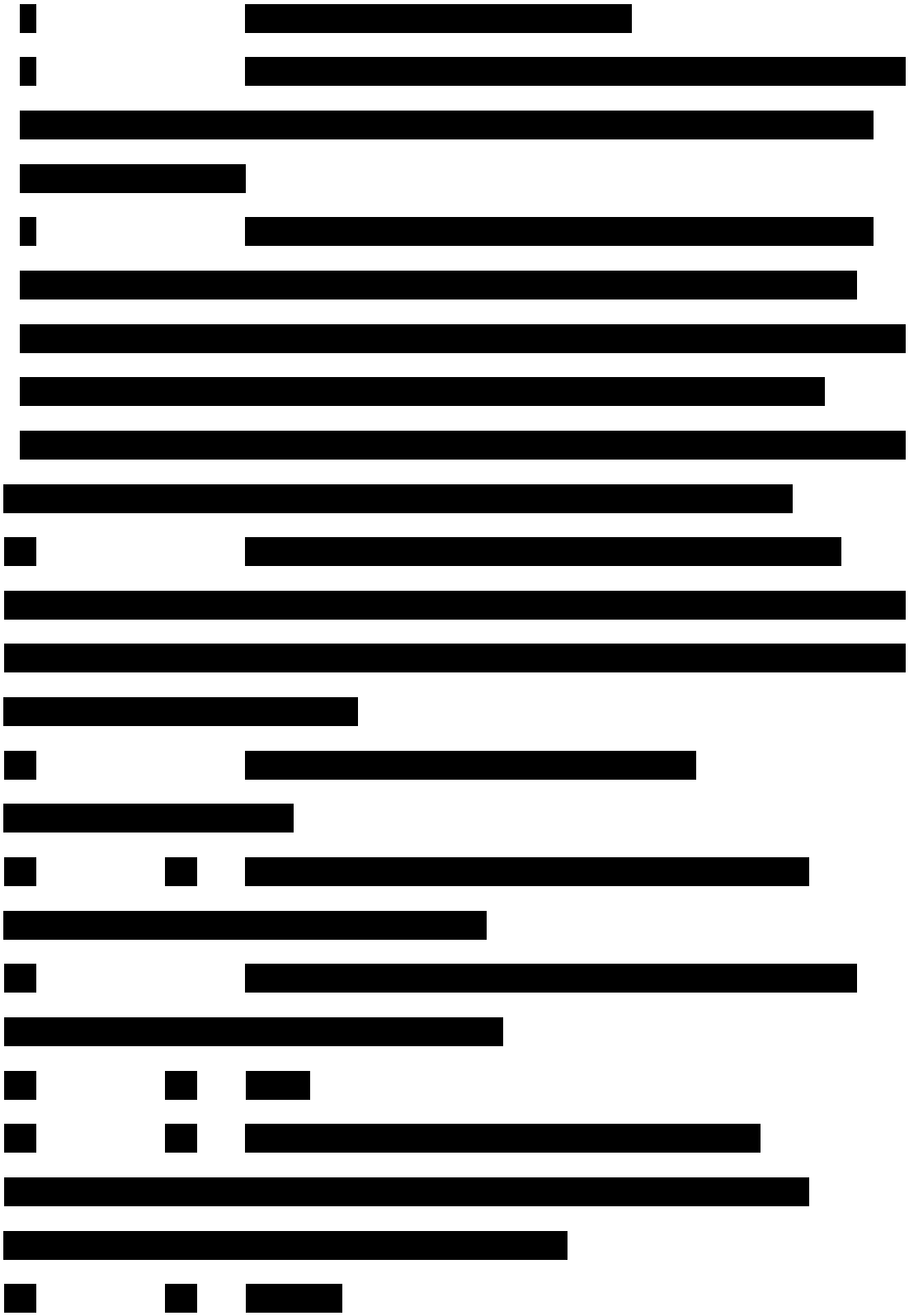
[redacted]

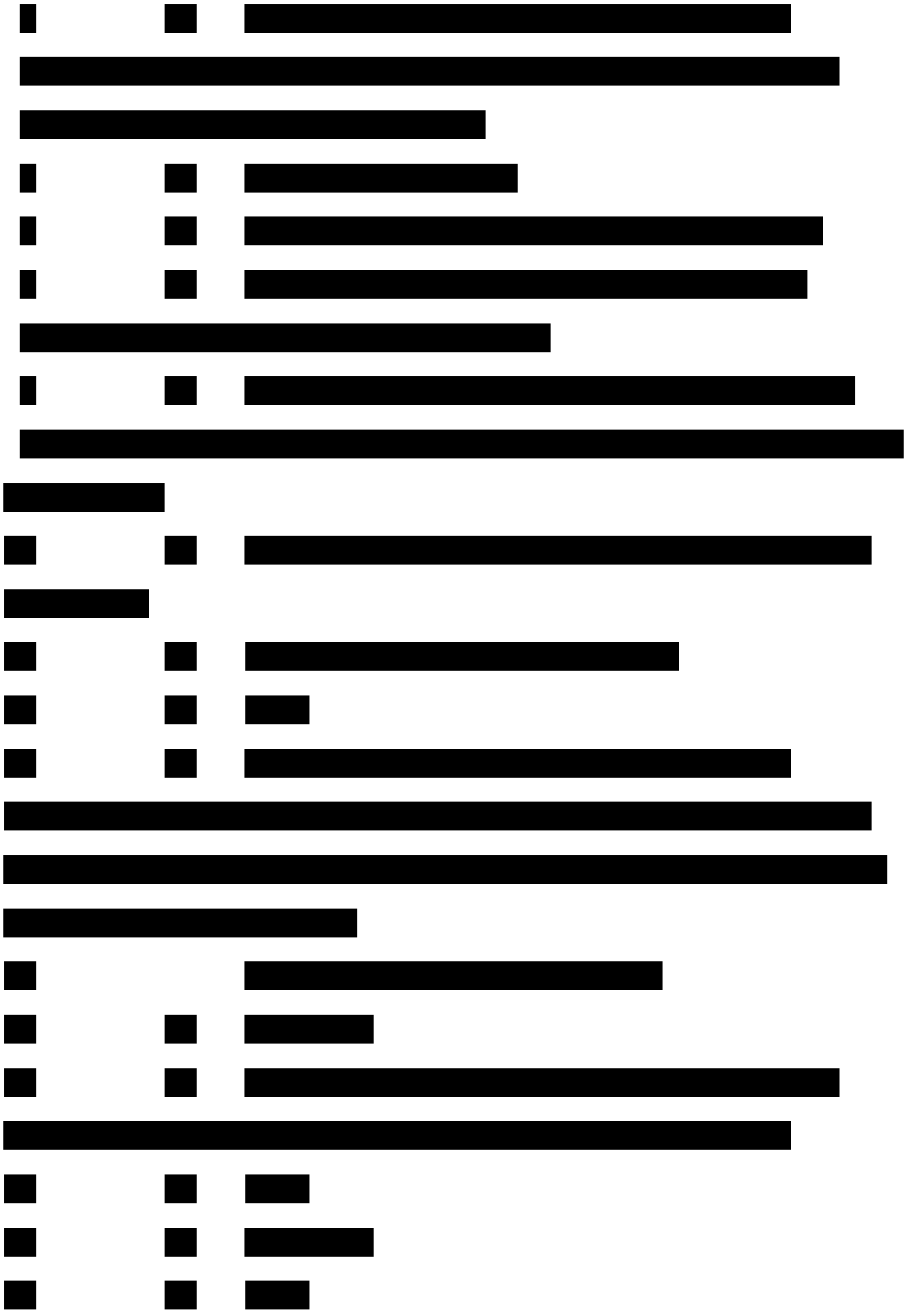
[redacted]

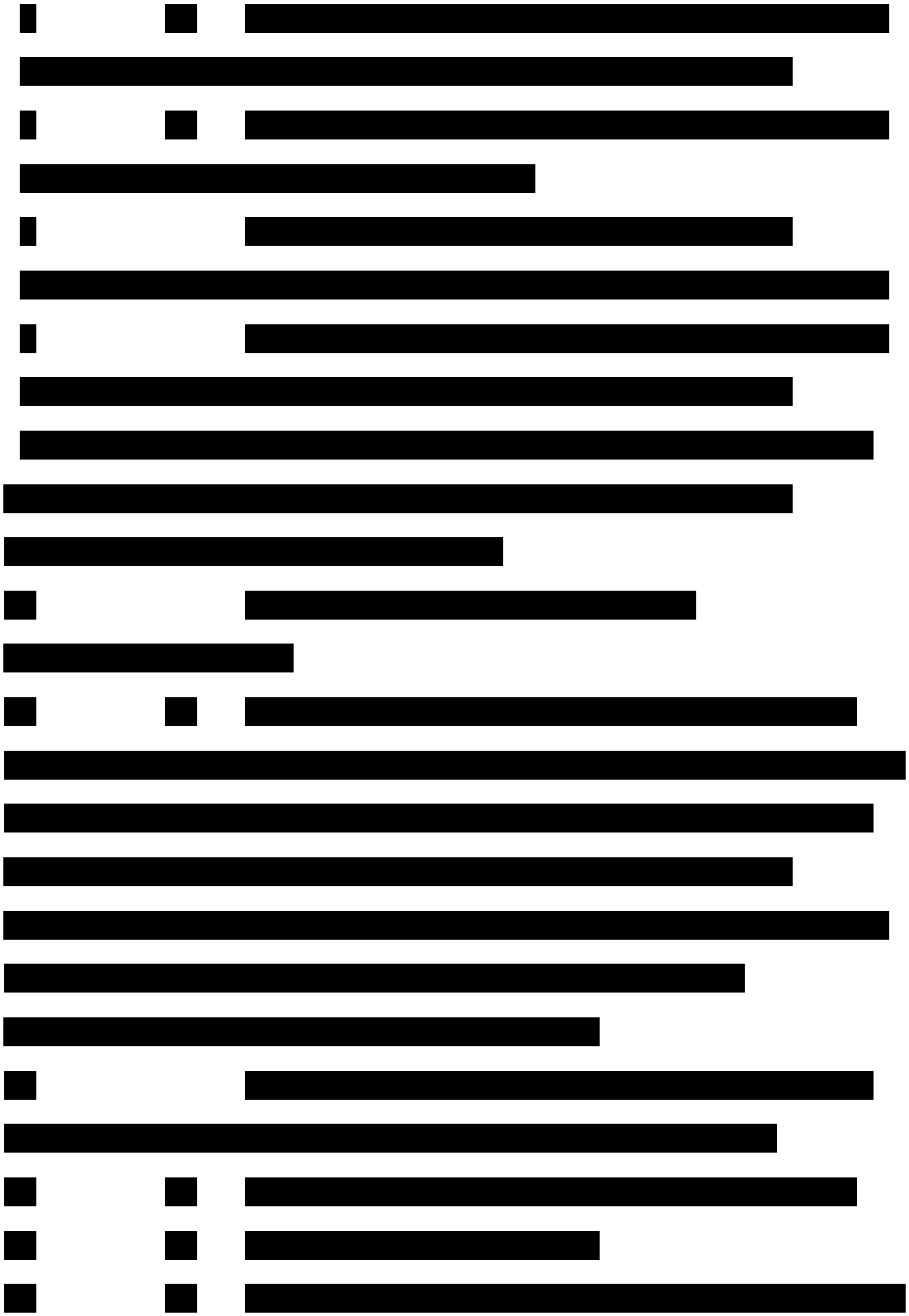
[redacted]

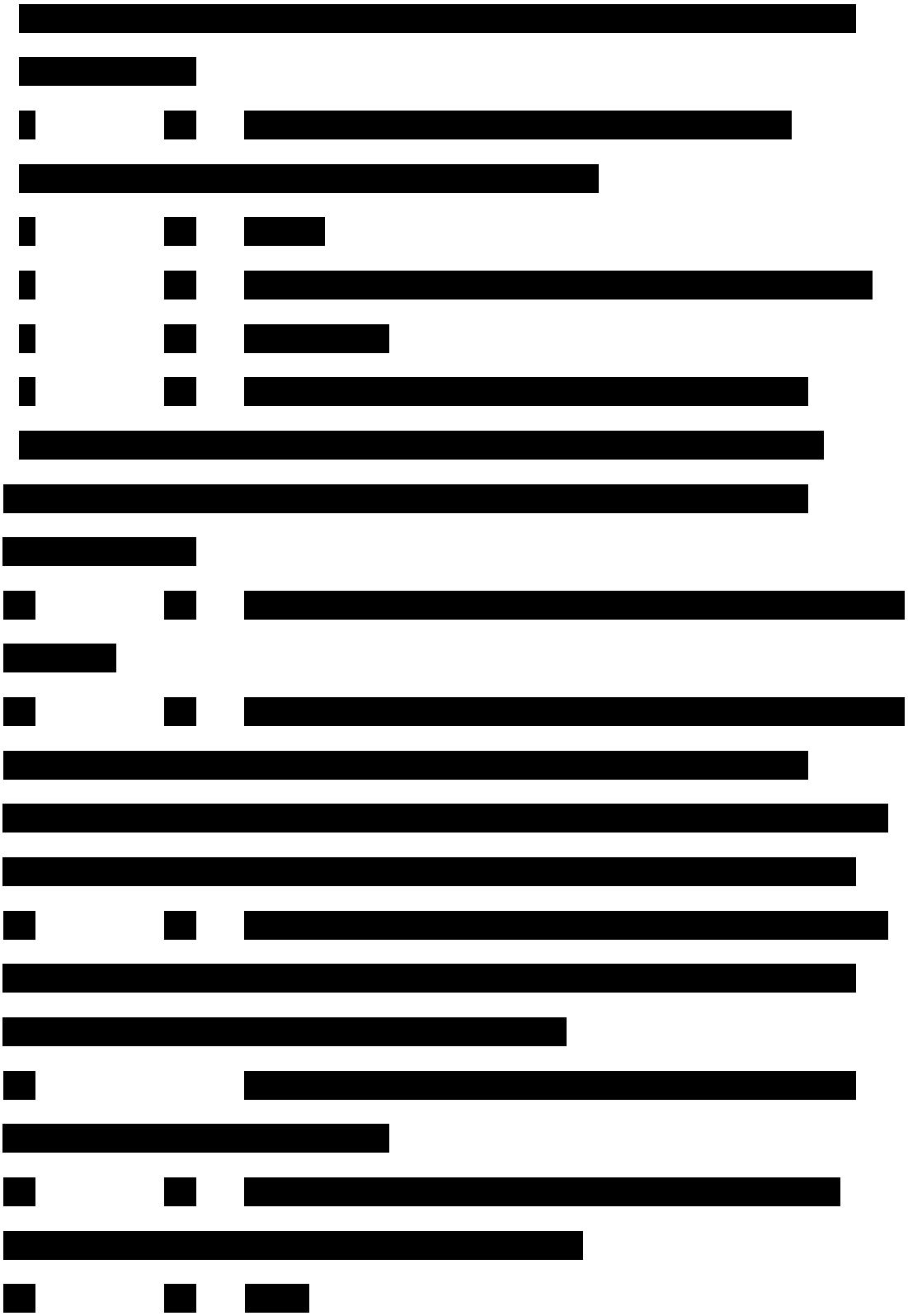
[redacted]

[redacted]









[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

O P E N S E S S I O N

BY MR. ASSMUS:

Q. You would agree, Professor Watt -- excuse me -- Professor Gans, I'm sorry, I have taken a lot of economists in the last two weeks -- Professor Gans, that the Shapley value is an equitable sharing role?

A. Can you define what you mean by equitable sharing role?

Q. I will come back to that. You agree that the Shapley value methodology can be used to model music licensing, like we have done here?

A. I do agree, yes.

Q. Would you agree that if the upstream music suppliers hold collective market power, the use of the Shapley methodology allows the removal of any monopoly power, correct?

A. I am not sure what you are meaning by that question. What do you mean? I am not understanding the question.

Q. So let me read it again and see, maybe you misheard it, and I will ask if you agree with it.

You agree that if in the context of using Shapley value to model music licensing, if the

upstream music suppliers hold collective market power, the use of the Shapley methodology allows for the removal of any monopoly power? Do you agree with that?

A. There is a lot loaded into that statement and I am -- I am loathe to answer it because I don't know if I will be saying the same thing that is going on in your mind. For instance, the term collective -- actually, I forgot what the word that came after collective and the term market power.

Are you meaning in the exercise of market power or something else?

Q. So let me orient you then. If you could turn to paragraph 65. And I am going now to your written direct testimony.

A. Yeah.

Q. The first sentence of that paragraph 65 is "bargaining among interactive streaming services and multiple music rightsholders is exactly the type of bargaining problem Shapley's solution is best suited to address." Tell me when you are there.

A. Yes, I see it.

Q. You see that? The second sentence is, "The approach has also been used to model the pricing of rights in connection with the voluntary

licensing of music by broadcast radio stations," correct?

A. Yes.

Q. And you drop a footnote there, footnote 36, Id, correct?

A. Yes, which is --

Q. And that refers us to footnote 35, correct?

A. Correct, yes.

Q. And one of the things you cite in footnote 35 is an article by Dr. Richard Watt, correct?

A. I do.

Q. And Dr. Watt has written extensively about Shapley and market power, hasn't he?

A. He has.

Q. And you know Dr. Watt professionally, don't you?

A. I do. He is very excited about Shapley values.

Q. We learned that previously. And you reviewed Dr. Watt's rebuttal report, correct?

A. I have looked at it, yes.

Q. And I understand you viewed his approach as generally sound?

A. Yes, as generally sound for the conclusions he was drawing.

Q. For the conclusions he is drawing. And the paper you cite in particular is Fair Copyright Remuneration, the Case of Music Radio, correct?

A. Right.

Q. Did you review that paper in connection with your citation of it?

A. I did. I can't remember everything about it right at this moment.

Q. And that would be Trial Exhibit 1714. And I would like you to turn to the conclusion, which is on page 35, the numbered page 35. It is not that long.

(Spotify Exhibit 1714 was marked for identification.)

BY MR. ASSMUS:

Q. And the last sentence of that conclusion, "The use of the Shapley methodology allows us to remove any monopoly power that music suppliers may otherwise hold."

Did I read that correctly?

A. Where am I supposed to be looking? I'm sorry.

Q. Last sentence of the conclusion, last

sentence of the first paragraph of the conclusion.

A. I'm sorry, yes.

Q. "The use of the Shapley methodology allows us to remove any monopoly power that music suppliers may otherwise hold."

A. Okay.

Q. That is a sentence from the paper you cited from Dr. Watt, correct?

A. Yes.

Q. Okay. And then I would like you to take a look -- apologies we're flipping around a bit here -- to paragraph 31 of your rebuttal testimony.

A. Okay.

Q. And paragraph 31 is in the section of your rebuttal testimony about the Shapley value, correct?

A. Yes.

Q. And the fourth sentence is "The fairness of these deals has not diminished by the market power of one side or the other. Shapley values are meant to incorporate market power asymmetries and the allocations that result from those asymmetries are one of the central ingredients in the fair result, according to Shapley." Is that right?

A. Yes, I wrote that, yes.

Q. So it is fair to say that Dr. Watt believes that Shapley value is a way to eliminate market power; and you believe that it is baked into the Shapley value; is that correct?

A. Well, this is the way --

MR. JANOWITZ: Excuse me, I have an objection. Dr. Watt has already actually testified to this very sentence.

JUDGE STRICKLER: Was it from this particular document or from a different document?

MR. ASSMUS: From a different document, Your Honor.

MR. JANOWITZ: It was the sentence from that paper.

JUDGE STRICKLER: It was the same exact --

MR. JANOWITZ: Yes.

JUDGE STRICKLER: No, no. It was the same exact article?

MR. ASSMUS: No, it wasn't.

MR. SEMEL: I believe it was a different article but a virtually identical sentence.

JUDGE STRICKLER: If I recall correctly, Dr. Watt testified that he thought that the language he used was unfortunate or words to that effect.

MR. SEMEL: Inartful.

JUDGE STRICKLER: So apparently we're now finding out that Dr. Watt used the same unfortunate language on two occasions. Why can't counsel ask him about that?

JUDGE BARNETT: Overruled.

BY MR. ASSMUS:

Q. This paper, Fair Copyright Remuneration The Case of Music Radio, Dr. Watt authored that paper, correct?

A. He did.

Q. This appears to be a published paper, correct, in the Review of Economic Research on Copyright Issues?

A. Yes.

Q. That's, in fact, do you know, a journal that Dr. Watt edits?

A. Yes, I believe he edits it, yes.

Q. Going on from paragraph 31 in your written rebuttal testimony --

A. Did you want to ask me any question about that? You just pointed out that I wrote something.

Q. No, I didn't. Thank you.

If you go on --

A. This was the issue of market power that I

was getting confused in with the question you were asking before.

JUDGE BARNETT: Well, there is currently no pending question.

THE WITNESS: Okay, all right.

BY MR. ASSMUS:

Q. You go on in paragraph 31, excuse me, I think in actually 32, give me one second.

MR. JANOWITZ: Your Honor, could I just ask if Mr. Assmus is going to, you know, have us shuffle around between documents, I would hope it would be for the purpose of asking a question rather than in effect testifying himself by juxtaposing documents.

JUDGE BARNETT: Do you have an objection that you can state in legal terms?

MR. JANOWITZ: Yes, Your Honor. I believe Mr. Assmus should ask questions rather than simply provide his own narrative.

JUDGE BARNETT: Sustained.

MR. JANOWITZ: I therefore move to strike his testimony, Mr. Assmus's testimony.

JUDGE BARNETT: You know, that's overruled. I don't want to go through the record and try to sort it out.

MR. JANOWITZ: I understand.

JUDGE STRICKLER: While you are looking counsel, I have a question for you, Professor Gans.

Does the Shapley value approach in this setting necessarily require the setting of a per unit rate or per unit royalty or can it also accommodate a percentage-of-revenue?

THE WITNESS: It could accommodate either.

JUDGE STRICKLER: And what fact -- does the Shapley approach inform you as to whether a percentage-of-revenue structure or a per-unit structure is preferable?

THE WITNESS: No, I don't think it does. I think you would choose between them in terms of thinking about some of the things we have talked about earlier, you know, downstream, what you want the downstream providers to be rewarded for and the same thing for the upstream providers.

JUDGE STRICKLER: So the Shapley evaluation approach is rate structure agnostic; is that fair to say.

THE WITNESS: It is in the way it is presented. There are ways in which it could become less so, with the consequence of messiness, but

that's not something we have gone anywhere near here.

JUDGE STRICKLER: In either of your approaches, whether it is the Shapley approach or to the extent you did the analogy of the efficient component pricing rule --

THE WITNESS: Yes.

JUDGE STRICKLER: -- what impact, if any, does the uncertain nature of ongoing downstream demand --

THE WITNESS: -- play?

JUDGE STRICKLER: What impact does the uncertainty of downstream demand have on the determination of the rate structure per unit or percentage-of-revenue under either the Shapley or ECPR approach?

THE WITNESS: Well, so I think it has a fairly big role, but it depends, again, what your goals are. To the extent that, you know, there have been times at which companies have had, you know, an inventory management problem and things like that.

And so they may well charge for their inputs as a percentage of revenue to allow people to sort of be confident of holding inventories and returning them and things like that. Book

publishers do this, for instance.

JUDGE STRICKLER: Are you familiar with the Mortimer article about Blockbuster Video? Is that the same point?

THE WITNESS: Oh, yeah. That article made the same point. Blockbuster Video had multiple stores, and so it had to stop these videos in different stores. And it had good understanding of demand from those different stores for different things; whereas the people who were supplying the videos, because it was some complicated arrangement that I can't remember all the details from, from the movie studios, ended up taking a percentage of revenue so as to mitigate, to encourage Blockbuster to be confident of carrying more inventory. But that's not something that comes up here because we don't think of inventory cost in a digital market like this one.

JUDGE STRICKLER: Are you aware of whether or not the agreements between the music -- the labels, the record companies and the interactive streamers, whether those royalty rates are expressed as a percent of revenue or per unit structure?

THE WITNESS: I am not sure. I have heard -- I have asked this question and I can't

remember the citation. I had heard percentage of revenue, but I have not seen any of those agreements.

JUDGE STRICKLER: If, if the evidence showed that those were percentage-of-revenue rates, can you -- do you have an economic understanding of why that would be the revealed preference, if you will, of the market participants?

THE WITNESS: I think that's a good question. I think one can imagine during an earlier time of building up a service, that you might want some -- it might be easier to account or forecast if you had percentage of revenue, but I couldn't tell you.

It would depend on what else was going on in those agreements as well. I am not sure. I am not sure I am in a position to say.

JUDGE STRICKLER: Thank you.

BY MR. ASSMUS:

Q. So I want to turn to the sound recording agreements that you used as benchmarks.

A. Agreements?

Q. Excuse me, it is a good correction. The sound recording level of payments, correct?

A. So which part -- you mean the sound

recording performance?

Q. Yes. So you use as a benchmark, correct, the market for sound recordings licenses to interactive streamers, correct?

A. Yes. We're talking about the top-down Shapley analysis?

Q. The top down, correct. Although I understand you also use that benchmark in your bottom-up, correct?

A. You are talking about Dr. Eisenach's number?

Q. Yes.

A. I'm sorry, okay.

Q. I am really talking about both. You used the -- you used the market for sound recording licenses for interactive streamers --

A. Yes.

Q. -- in a number of contexts in your report, correct?

A. Yes, yes.

Q. And because it was what you call a hypothetical unconstrained market, you view that the sound recording royalty payments as a fair allocation in value of the underlying copyrights, correct?

A. It is a -- it is a fair allocation benchmark.

Q. Is it your opinion that the allocation of value in the -- in that market, the sound recording market for interactive streamers itself satisfies the 801(b) factors?

A. I would have no idea.

Q. You have no idea. You agree that a benchmark should be scrupulously examined to determine if it is appropriate, correct?

A. Well, this is not a benchmark in the sense that we're going to hold it to set to a benchmark. It was a benchmark in terms of a bright line above which we would be -- you know, I would be determining that a rate proposal was unreasonable.

I have never advocated that the rate here be set at that benchmark.

Q. Although you would agree that a rate set here that is lower than that benchmark would, in your view, be consistent with 801(b) factors?

A. Well, the 801(b) factors also have to do with things that impact on the structure of that, so this was just a calibration to see if the levels were okay.

Q. And is it your testimony that so long as

the level of the rate set here is below that benchmark, it is consistent with 801(b) factors?

A. I believe that the -- well, it isn't consistent -- it is consistent in a conservative way.

You know, if you take a rate proposal that is 40 percent lower than, you know, a return by the economically equivalent copyright holder, again using our child standard, that is not going to be regarded as fair. It is fair in the inequality sense is that it is no more than what the sound recording people are getting. So it is -- it is a stretch of the word fair.

So I don't want to -- I don't want to -- I don't want to say that it is, you know, it is consistent in a conservative way.

Q. You understand the rate set here needs to be consistent with the 801(b) factors, correct?

A. Yes.

Q. And you have proposed the sound recordings benchmark as I think, you called it, a five alarm, in your deposition you used the word alarm bell, here you used the word five alarm indicator of the --

A. -- unreasonableness, yes.

Q. -- unreasonableness. So what I would like to know is if the Copyright Owners proposed a rate that was equal to the sound recording benchmark that you used, would you consider that itself consistent with the 801(b) factors?

A. It is possible, partly because even on the sound recording side, the sort of large scale monopoly concerns that sort of were the origin of this whole matter have not been borne out. I don't think any sound recording copyright holder has insisted on a price so high that it has caused there to be only one downstream streaming provider.

So we're not even at that level here. So -- but I wouldn't want to speculate on exactly the thing. I haven't given it enough thought. Again, inflections in measurement I am thinking more -- I am worried about.

JUDGE STRICKLER: Professor Gans, if I understood your testimony previously when I asked you a question about downstream competition, it wouldn't be in the interest of record companies or Copyright Owners to have only one service because that would give that service undue power downstream, it would be in their economic interest to maintain competition down below and have multiple services,

all of them scratching to get by in a perfect world?

THE WITNESS: In a Shapley analysis, but just imagine for the moment a situation where the sound recording artist didn't -- the sound recorder didn't negotiate, and they just said: We want, you know, a dollar a play or something. I don't know what level but whatever the monopoly level is per-play.

And everybody, you know, the downstream service providers competed and they realized the only time they are going to be able to pay for that is if there is only one of them, so eventually they all exit but one. And that one doesn't earn very much in the way of profits but it charges monopoly rates all the way downstream.

And so you have the monopolization of the market, which is the very reason we're here keeping mechanical rates from doing that.

JUDGE STRICKLER: Thank you.

BY MR. ASSMUS:

Q. Now, the reason you were willing to use the sound recording market as a benchmark is because you believe there exists effective competition in that market, correct?

A. There is competition in that market. I

don't know -- maybe I said at some point it was effective. There is competition going on in that market. There are major labels and there are also minor labels.

Q. You did use, however, the word "effective competition," correct?

A. Okay. I -- you would have to remind me if I did.

Q. Well, I want to explore this a little bit. There could be a level of competition that you deemed ineffective?

A. Sometimes when you get a cozy duopoly, we used to have airlines in Australia that toured them, it is pretty clear there wasn't much in the way of competition going on.

Q. So what --

A. So you don't just want to count up numbers of players is what I am saying. You have to think about what they are doing, what investments they are making, and other things that you mentioned earlier.

Q. And you have concluded that the sound recording market does have effective competition; is that right?

MR. JANOWITZ: Objection. He has asked

this question several times about effective competition. And he has gotten the answers that he has gotten from the witness.

JUDGE BARNETT: I think your objection was asked and answered.

MR. JANOWITZ: Yes.

JUDGE BARNETT: Sustained.

BY MR. ASSMUS:

Q. So let's take a look at paragraph 32 of your written direct testimony. Let me know when you are there.

A. I am here.

Q. In the middle of that paragraph you say, "In other words, a reasonable rate would be expected to prevail in a reasonably competitive hypothetical market for mechanical licenses."

A. Yes.

Q. I would like to explore with you what you mean by "a reasonably competitive hypothetical market." You mean a market that has some degree of competition, correct?

A. Certainly some, yes.

Q. And you analyzed the sound recording market to determine whether it was a reasonably competitive hypothetical market, correct?

A. My understanding of the sound recording market was not significantly different from the publishing market in terms of its competitiveness.

JUDGE STRICKLER: Did you find both of them to be reasonably competitive, not competitive, perfectly competitive?

THE WITNESS: I think in terms of the -- it is certainly not perfectly competitive, not cozy duopoly or anything like that, but somewhere in between. You know, would there be markets around the world which I would like to see more players in than in those markets? Yes. But that doesn't mean there isn't enough competition going on there.

JUDGE STRICKLER: Thank you.

BY MR. ASSMUS:

Q. And what you did to analyze the reasonable competitiveness of the sound recording market was to observe that there are multiple record labels, correct?

A. I observed that there are multiple record labels. I also know that there are independent record labels as well.

Q. And that was, in fact, the full extent of your analysis, wasn't it?

A. I did not delve into it in a detailed

way. As I said, it was the relative market structures of publishers and labels that concerned me because I was coming up with a ratio.

Q. And you don't know the market share collectively of the major record labels, correct?

A. I don't know offhand, no.

Q. And if the sound recording market was not, in fact, reasonably competitive, it would not be a proper benchmark in your opinion, would it?

A. Well --

MR. JANOWITZ: Objection, asked and answered, actually.

JUDGE BARNETT: Sustained.

JUDGE STRICKLER: Professor, did you consider whether there was a Cournot complements problem in the sound recording royalty -- in the sound recording market?

THE WITNESS: So that's one of the issues. I mean, subject to my qualifications over the term Cournot complements, but if there was, imagine there was a Cournot complements and that the labels were selling things that were not as perfectly substitutable as we have talked about before, and may be complementary.

JUDGE STRICKLER: The streaming services,

because they require a universal catalogue?

THE WITNESS: Exactly. And the thing is it is important to recognize what effect that has on the total profits from the sound recording, which is what we're talking about here.

And this came up in the deposition, as Mr. Assmus will remember, is that the Cournot complements problem to the extent it exists causes a deflation in the profit rate because remember what happens there is people are acting in their own interest in setting prices or terms or something that leads them to price higher than the monopoly level.

So if you are looking at the sound recording as an aggregate, the peak will be at the monopoly, but if they charged a little bit more, their profit levels will go down. So to the extent there is a Cournot complements problem, that is going to push that 8.1 or -- oh, are we open or closed? That number --

JUDGE FEDER: We're open.

THE WITNESS: That number somewhere would mean it would be much lower than would prevail if there were full market power but no complements problem.

So there is an extent in which that biases in favor of using this or makes it even more conservative to use the sound recording benchmark rate because Cournot complements dissipate profits from everyone, including the sound recording, including the labels.

JUDGE STRICKLER: It dissipates profits, but it doesn't necessarily reduce rates?

THE WITNESS: That's right. But remember --

JUDGE STRICKLER: It is the high rate that dissipates --

THE WITNESS: Correct but I was using, or I was using at least for the core of the analysis, I was using profits, not rates.

JUDGE STRICKLER: Right. I wasn't asking how it applied to the Shapley analysis. I was just asking how it impacts rates in the marketplace.

THE WITNESS: I see, okay.

JUDGE STRICKLER: Which I thought was the nature of the question.

THE WITNESS: It may increase the rates, if they were -- but, remember, those rates were negotiated, so I wouldn't expect the Cournot complements case to arise there. The problem,

Cournot complements problem.

JUDGE STRICKLER: And by negotiated, you mean negotiated by each individual record company with the streaming services?

THE WITNESS: With the streaming service, that's right. And negotiated, they would be, in fact, non arms length, so they would take into account some of these externalities.

JUDGE STRICKLER: Thank you.

JUDGE BARNETT: Is this a good place for us to take a break?

MR. ASSMUS: As good as any, Your Honor.

JUDGE BARNETT: We will take a 15-minute recess.

(A recess was taken at 3:25 p.m., after which the hearing resumed at 3:47 p.m.)

JUDGE BARNETT: Please be seated. Mr. Assmus, open or closed?

MR. ASSMUS: Open. Thank you.

JUDGE BARNETT: Thank you.

BY MR. ASSMUS:

Q. Professor Gans, you are acquainted with Professor Joel Waldfogel, correct?

A. Yes.

Q. You have heard him talk?

JUDGE STRICKLER: Personally acquainted?
THE WITNESS: I am personally acquainted.
BY MR. ASSMUS:
Q. You have heard him talk and he has heard you talk?
A. That is correct.
Q. And he is very interested in copyrights and digitization, correct?
A. He is interested in piracy.
Q. Piracy. And he has a reputation for careful empirical analysis, correct?
A. Yes.
Q. In fact, you authored a paper exploring one of his results, correct?
A. That was motivated by one of his results.
Q. You attached your CV to your written direct testimony, correct?
A. I did.
Q. And one of your -- one section of your CV is on your publications, correct?
A. Yes.
Q. And you list books that you have authored?
A. Yes.
Q. And you also list 12 working papers,

correct?

A. Yes.

Q. Are the working papers an important part of your academic record?

A. Yes, that's why I've listed them, yes.

Q. And there are some well-known series of working papers, correct?

A. There are some series of, yes, there are some that are known more than others, yes.

Q. One of those series is published by the National Bureau of Economic Research?

A. Yes.

Q. And you, in fact, submit many of your papers to that National Bureau of Economic Research working papers series, correct?

A. Yes, where they don't make a policy recommendation.

JUDGE STRICKLER: Didn't you also say earlier on that you were affiliated with the National Bureau?

THE WITNESS: I am. That's why I get to submit working papers there. That's the thing.

BY MR. ASSMUS:

Q. Now, I want to go back a little bit to Shapley value. We talked quite a bit about the data

that was used in your bottoms-up Shapley analysis and Dr. Marx's alternative Shapley analysis, correct?

A. Yes.

Q. And while we're on the topic of data, I'd like you to turn to figure 6 in your written rebuttal testimony, which is on page 25.

MR. ASSMUS: And, Your Honor, I am going to do this in a way that does not require us to close the room, I believe.

JUDGE BARNETT: Thank you.

THE WITNESS: Yes.

JUDGE BARNETT: Page reference again, I'm sorry?

MR. ASSMUS: Yes, page 25, figure 6, which is after paragraph 45. Page 25 is the best way to find it.

THE WITNESS: Yes.

BY MR. ASSMUS:

Q. And these projections of global streaming revenue were the basis for your bottoms-up Shapley approach, correct?

A. Yes.

Q. And you make an estimate of U.S. streaming non-content costs as a

percentage-of-revenue, that's the red line falling in a monotone fashion to the right, correct?

A. Yes.

MR. JANOWITZ: Objection. Monotone? Excuse me.

THE WITNESS: Monotone means just decreasing, or increasing.

MR. ASSMUS: It's a mathematical basis.

JUDGE BARNETT: Overruled.

MR. JANOWITZ: Thanks for the lesson.

THE WITNESS: It is rather boring.

BY MR. ASSMUS:

Q. And your projection is that in 2022, with respect to interactive streaming, their non-content costs as a percentage-of-revenue are roughly 7 percent, correct?

A. 2022? Oh, yes, that's right.

Q. But you haven't benchmarked that level of non-content costs against other similarly-situated industries, correct?

A. That's correct. We only used Spotify's data.

Q. In fact, if you projected this out to, say, 2026, you would expect non-content costs to fall even further; is that correct?

A. They may fall further but it would depend on what's happening to revenues because that was the chief input.

Q. So I was sort of finishing up on the data. Another aspect of a Shapley value model is its players, correct?

A. Yes.

Q. And you fault Dr. Marx for combining all of the interactive streaming services into one player in her alternative Shapley model, correct?

A. Well, I believe that it is important to recognize that those streams -- there are multiple streaming services that could be substitutable for one another and to explore that.

Q. Now, this proceeding isn't the first time that you have analyzed a Shapley value model in a rate-setting proceeding, correct?

A. Yes, correct.

Q. You were, in fact, hired by the Australian Competition -- I'm going to call it the ACCC, I'll let you supply the acronym -- essentially the equivalent of the U.S. DOJ and FTC?

A. Right.

Q. And in that connection you performed a Shapley value analysis, correct?

A. Well, I was -- the Copyright Owners in that case had performed one, and I analyzed it and I guess corrected it as well.

Q. So in connection with that work you actually carried out a Shapley value analysis, correct?

MR. JANOWITZ: Objection, mischaracterizes his testimony.

MR. ASSMUS: I am asking.

THE WITNESS: I didn't put it forward first but I did change the models just as I have done here.

BY MR. ASSMUS:

Q. And that proceeding was about public performance license payments from gyms, correct?

A. That's right.

Q. And the upstream player in that proceeding was the Phonographic Performance Company of Australia, right?

A. Right. So the collecting agency for the performance rights.

Q. And in that model there were, in the Shapley value model that you corrected, one of your corrections was to add an additional player, correct?

A. In terms of splitting the complementary copyright holders into two players.

Q. On the upstream side?

A. On the upstream side, that's correct.

Q. And on the downstream side you modeled the two players, correct?

A. On the downstream side I had the gyms and I explored some variance of the model, which included consumers because of the way the copyright holders were measuring value.

Q. And there were four players in that model, correct?

A. In one of the models that I explored, yes.

Q. And I take it there was more than one gym chain in Australia, correct?

A. There is, although it was argued -- the one variant of it was argued that they might be -- have local markets, but I regarded them as competing with one another.

Q. And you modeled them as a single player in that Shapley value analysis, correct?

A. I -- I did it for the purposes of comparison with the others, but I noted very clearly what assumptions I was making. When I did it, I

would have noted it.

I mean, the chief thing that I did was split the complementary sellers, which was a move that, as we have already noted here, increased the rates to the copyright holders.

Q. And that's the same position that Dr. Marx took in her alternative model, correct?

A. In her alternative model, yes.

Q. Now, one of the things you opine about in your direct testimony is about the disaggregation of the track, correct?

A. Disaggregation of the --

Q. Excuse me, the disaggregation of the album.

A. Oh, the unbundling.

Q. The unbundling, yes. You actually used the word unbundling.

A. Yes. I did -- I did talk about that as one change that has occurred over the past.

Q. And that's in paragraph 24 of your written direct testimony?

A. Most likely.

Q. The heading there is rates have been depressed by a failure to account for the higher value of new consumption patterns?

A. Correct.
Q. And the disaggregation of the album began at least as far back as 2002, correct?
A. Correct.
Q. iTunes Store launched around 2003?
A. Yeah, although not all -- some things were album-only.
Q. And since 2003 the Copyright Royalty Board has had three potential occasions to change the mechanical royalty rate applicable to tracks, correct?
A. I don't know. I will take your word for it.
Q. You understand that there was a proceeding decided in 2008, correct?
A. Yes.
Q. And a proceeding settled with respect to CDs in 2012, correct?
A. Yes.
Q. And this proceeding, in fact, settled as to CDs in 2016, correct?
A. Yes.
Q. So that's three opportunities for the Copyright Royalty Board to revise the CD penny rate since the disaggregation of the album in 2002,

correct?

A. Okay. You are confusing me on -- I generally think of settlements as --

Q. I'm sorry?

A. I generally think of settlements as the term and not by the Copyright Board, but you are the lawyer.

Q. But as of -- you understand 2008 was a contested decision, correct?

A. Yes.

Q. And as of 2008 what you call the unbundling of the album had been ongoing for six years, correct?

A. Not necessarily. Do you know how small the download market was in 2003-2004? I mean initially it only launched on Macs. You could only use, you know, an iPod with a Mac. And then it had to expand, it always had to work through a PC. A very different, you know, market.

Q. You understand the disaggregation, excuse me, the unbundling of the album was prevalent by 2012, correct?

A. Yes.

Q. And you understand that if there wasn't a settlement of the 2012 rate-setting proceeding,

either the publishers or the other parties could have proceeded to a proceeding like this one, correct?

A. Okay.

Q. You understand that?

A. They could, yes, they could have. I'm sorry. I am having trouble unbundling that line of questioning from this paragraph 24.

Q. In your report you articulate a concept of business model neutrality, correct?

A. I do.

Q. And that means in your view that the rate should focus on the fundamental drivers of demand?

A. It is more expressed in the negative. The rate should not address any particular business model or set of business models.

Q. And if you could turn to paragraph 54 of your written direct statement, I believe this is where you are discussing, among other places, business model neutrality.

A. Okay.

Q. Paragraph 54 says: I articulate the principle business model neutrality that the rate structure for mechanical licensing should be neutral with respect to the business model for interactive

streaming services.

A. Right, right.

Q. You say: In other words, the rate structure should endeavor to not reference particular business models but instead focus on the fundamental drivers demands.

A. Okay.

Q. Now, that concept isn't in the 801(b) factors, is it?

A. Fundamental drivers demand? I believe it is in 801(b) or (c), reference to the relative contributions of all parties.

Q. You agree the concept of business model neutrality is in the 801(b) factors?

A. Oh, business model neutrality?

JUDGE BARNETT: What paragraph?

MR. ASSMUS: 54, Your Honor.

JUDGE STRICKLER: 54 of his?

MR. ASSMUS: Written direct.

JUDGE STRICKLER: Thank you.

THE WITNESS: It is, again, to the relative -- recognized relative contribution of all parties. I was very explicit this morning in that I thought business model neutrality was an excellent means of encouraging downstream innovation, by which

I mean downstream firms were able to appropriate the full values of innovations they incur without having to cede too much of that value to upstream firms.

JUDGE STRICKLER: Is there a downside to the streaming services in having a per unit structure as opposed -- I mean, you just explained the positive.

THE WITNESS: Yes, the downside is they don't get insurance. They are on their own. If they want to get the whole upside, if they do an innovation and it fails to increase revenue or decrease revenue, they don't get to pass that off to the copyright holders.

JUDGE STRICKLER: Is there a downside to the Copyright Owners in having a per unit structure?

THE WITNESS: Yes, there is potentially. It means that they cannot as easily participate, get the value of innovation, that may be downstream but complements to things that they work, that they do themselves.

In other words, if they came up with a new form of music, and then somebody entered with that, a per unit structure would not allow them to capture as much revenue for that.

JUDGE STRICKLER: Would you say that the

relative appetites for risk by the upstream seller and the downstream buyer impact the decision as to whether you use a rate structure that is a percentage-of-revenue or per unit?

THE WITNESS: I think my general belief is that -- oh, it depends how far you are going down, but my general belief is that corporations, especially, you know, established corporations should be considered as largely risk neutral, and so I am not worried about their appetite for risk.

I can imagine that smaller Copyright Owners, like the fundamental Copyright Owners would have an issue associated with appetite for risk, especially in considering entering or not entering into composing.

JUDGE STRICKLER: If it is the case, using the analogous market of sound recordings, labels, contracts with interactive streaming services, if they show that -- if the record were to show that they predominantly used percentage-of-revenue rates as opposed to per unit rates, would that suggest a revealed preference to allocate risk in a manner that was best reflected by the percentage structure?

THE WITNESS: So it could do that or

alternatively it could represent the different roles that song performers play versus songwriters play. You know, you write a song, you are done. It is not like you go out and say I have got a song, I have got a song.

But if you are performing a song, people seem to have to do a lot more work running around promoting. So I can imagine that they might want to share in revenue for that reason.

In other words, there is a tighter complementarity between what goes on upstream and what goes on downstream than perhaps is the case with that. But I am only giving you a theory here. I am not sure.

JUDGE STRICKLER: Thank you.

BY MR. ASSMUS:

Q. So I just want to explore briefly this concept of business model neutrality. You understand there -- I will give you some examples of some business models.

You understand that the market right now has some free to the user ad-supported services, correct?

A. Some. One.

Q. As well as full-service paid subscription

services?

A. Oh, pure play subscription services, yes.

Q. And you understand one prong of the Copyright Owners' proposal is a minimum per user rate?

A. I do.

Q. Now, an ad-supported service could generate less revenue per user than a paid service, correct?

A. It could. You showed me documents that it did.

Q. And under the Copyright Owners' proposal that ad-supported service would pay the same $1.06 per user at least on a minimum basis that a paid service would?

A. I think it could, yes.

Q. And, in fact, that would mean that as a percentage-of-revenue, under the Copyright Owners' proposal an ad-supported service might pay significantly more, correct?

A. Oh, yes. If they are earning less revenue and they are paying the same amount, by definition, that's more.

Q. Now, in connection with your -- strike that.

The Copyright Owners are proposing a, roughly a tripling of the mechanical royalty rate, is that correct, on a headline rate basis?

A. Well they haven't expressed it as per-play before so it depends how you measure it, but it is an increase.

Q. And you assume that services would likely raise their prices in response to higher publishing royalties, correct?

A. I do not assume that necessarily, no. In fact, you know, the bottom-up Shapley analysis has shown that that may well not be the case.

Q. Can you take a look at paragraph 73 of your written rebuttal testimony.

A. Okay.

Q. The second sentence says: "It would be reasonable to assume services would raise prices in response to higher publisher royalties."

A. Yeah, it would be reasonable to assume. I think -- I think that's, you know, that's part of the changes that might occur.

Q. But you haven't considered the impact of the Copyright Owners' proposal on consumer prices, correct?

A. Apart from knowing that they might change

consumer prices in the short run.

Q. And you likewise have not examined the price elasticity of demand for subscription streaming services, correct?

A. I have not. I have not done that. There is some, some degree of assumption in that intersubstitution parameter in the bottom-up model, but that's it.

MR. ASSMUS: Nothing further right now.

MR. SAMAY: Good afternoon, Panel. My name is Scott Samay and I represent Amazon in these proceedings.

CROSS-EXAMINATION

BY MR. SAMAY:

Q. Professor Gans, I have got a few questions for you on behalf of Amazon and I would like to start at the end of your direct presentation where you had some comments about Professor Dean Hubbard's criticisms of your work.

Do you recall that?

A. Yes.

Q. And I just want to be clear that other than the responses that you presented to his criticisms of your work, in this case you have not offered any criticisms specifically of Amazon's

expert, Glenn Hubbard, correct?

A. Specifically, no, but I could if you want.

Q. I want to talk a little bit, and I am not going to go over the Shapley analysis because I think that has been discussed thoroughly, but the Shapley --

A. I'm sorry, I misspoke. I did offer one. Judge Strickler asked me about price discrimination. And I did refer to Professor Hubbard's presentation slides and his discussion of business and economy class airfare and interpretation of that, just to correct.

Q. You submitted a rebuttal report?

A. No, that was when questioning today.

Q. Right. And in your rebuttal report, you didn't say --

A. No, I didn't.

Q. -- anything at all about --

A. No, I didn't.

Q. -- Dean Hubbard's --

A. No.

Q. Price discrimination --

A. No, I didn't.

Q. -- analysis, right?

A. No, I didn't.
Q. So Shapley value, that's a game theory, right?
A. That comes out of game theory, yes.
Q. Okay. The Copyright Act was enacted in 1909 and you discuss that in your report, correct?
A. Yes.
Q. And I think you said that it came out of context of fears of anticompetitive behavior by rights holders. Is that right?
A. By rights holders, yes.
Q. Okay. And essentially what the Copyright Act did was it prevented playing games with monopoly power, right?
A. It prevented -- it was a regulation designed to prevent the leverage or to prevent a downstream monopoly from occurring, correct. You would -- you would -- yeah.
Q. And what came out of it was the 801(b) factors and you have referred to that in these proceedings, correct?
MR. JANOWITZ: Objection, lack of foundation.
MR. SAMAY: Withdrawn.
JUDGE BARNETT: Thank you.

BY MR. SAMAY:

Q. The 801(b) factors were referenced in your cross-examination at least, correct?

A. Yes.

Q. In your reports, however, you don't specifically lay out any opinions with respect to the 801(b) factors, do you?

A. I was asked to do things with regard to them but I don't draw each little bit to that in a way a lawyer might.

Q. Okay. You understand, though, that there are four factors --

A. I do.

Q. -- that govern the policy objectives --

A. Yes.

Q. -- behind setting the rates?

A. Yes.

Q. And you did not go through those four factors and lay out opinions with respect to each of those, did you?

MR. JANOWITZ: Asked and answered.

JUDGE BARNETT: Sustained.

BY MR. SAMAY:

Q. In your opening report, do you mention the 801(b) factors in any substantive way

whatsoever?

MR. JANOWITZ: Asked and answered.

JUDGE BARNETT: Sustained.

MR. SAMAY: I was asking whether in his opening report he mentioned it in any substantive way, which I think is a little different than what we were talking about before, the four separate factors, but it doesn't matter.

BY MR. SAMAY:

Q. Let's talk specifically about those four factors. You haven't offered any opinion regarding how the adoption of the Copyright Owners' proposal might affect the rates charged by Amazon for streaming services, have you?

A. For Amazon specifically, no.

Q. Okay. And you actually offer no opinions regarding how the adoption of the Copyright Owners' proposal would affect the number of overall consumers in the market, do you?

A. I do not.

Q. Okay. And you don't offer any opinions about how the adoption of the Copyright Owners' proposal might affect the overall numbers of consumers streaming music legally in the marketplace, do you?

A. I didn't -- I didn't offer an analysis based on copyright law not holding.

Q. And you don't offer any opinion regarding how the adoption of the Copyright Owners' proposal might impact the overall revenue of the Copyright Owners for mechanical royalties, correct?

A. Of the overall revenue, no, not directly I don't.

Q. Okay. And the Copyright Owners' proposal could actually decrease the revenues received by Copyright Owners compared to what they might receive under the current share of revenue structure, correct?

A. I mentioned, as I mentioned to Judge Strickler, that is possible.

Q. Okay. And in terms of relative roles, with respect to Amazon, you recognize that Amazon has been innovative with respect to downstream streaming capabilities, correct?

A. It has been -- it offers some distinct business models to other players, one definition. I guess, if you want, you can call that innovative. We know that's a loaded term but I'm happy to think of that as thoughtfully creative.

Q. Okay. And in your analysis of the

reasonableness of the Copyright Owners' proposal, you didn't account for Amazon's innovation in the marketplace in any particular way, did you?

A. I think I did. In fact, that's top of mind. Not -- not -- not -- not specifically analyzing --

Q. Do you think you did?

MR. JANOWITZ: Can he let the witness finish, please?

JUDGE BARNETT: I think he is trying to answer the question, Mr. Samay.

MR. SAMAY: My question was only did he take it into account in any specific way, and he said yes.

MR. JANOWITZ: He was clearly in the midst of responding to the question when he was cut off.

THE WITNESS: As I have said before, downstream firms are coming up with various different ways to give access to consumers to music. Amazon is one of those ones.

And to the extent that it is doing anything that other people haven't done before, that's what we're -- what I'd like to see.

BY MR. SAMAY:

Q. Okay. So your answer is yes, you took Amazon's --

A. I did, in my -- I didn't write about Amazon specifically. I might have occasionally written about Amazon specifically, but it was -- it was in my mind.

Q. Okay. You have got your deposition in front of you?

A. I do.

Q. Okay. If you could turn to page 355 of your deposition. And I am going to direct you to the very last line, line 25.

A. Okay. All right.

Q. Let me know when you are there.

A. Yeah, I can see it on the screen here.

Q. Are you there?

A. Yes.

Q. All right. At your deposition did I ask you:

"Question: Did you take Amazon's innovation in the marketplace into effect in any particular way when judging the reasonableness of the Copyright Owners' proposal?"

A. That's a clear question and I said I didn't.

Q. Okay. And your answer was: "I didn't take it into account in a particular way."

A. In a particular way, that's right. I mean, I guess I was, you know, with the flow of things I said I took it as part of the general set of downstream things right now. That's all. Both are the -- both are the same.

Q. Okay. They are the same? You didn't take Amazon's innovation into account in any particular way?

A. I said I didn't particularly take it into account, but I did.

MR. JANOWITZ: Objection.

BY MR. SAMAY:

Q. You said you didn't but you did; is that your testimony?

MR. JANOWITZ: Could I just lodge my objection, please?

MR. SAMAY: Sure.

MR. JANOWITZ: He is trying to impeach the witness. He is arguing with the witness over what he said. In fact, the witness' testimony is consistent with his testimony at his deposition. So I think this is an improper use of the deposition.

JUDGE BARNETT: Sustained.

BY MR. SAMAY:

Q. All right. Professor Gans, you don't offer any opinion regarding whether the Copyright Owners' proposal reflected the relative role of Amazon with respect to its technological contributions, did you?

A. To avoid the issue we had before, did I particularly talk about Amazon's respective role? Is that what you are asking me?

Q. Yes. Did you offer any opinion whether the Copyright Owners' proposal reflected the relative role of Amazon with respect to its technical contributions?

MR. JANOWITZ: That's asked and answered as well. He said before that he did actually --

JUDGE BARNETT: I don't need a narrative, Mr. Janowitz.

MR. JANOWITZ: Pardon?

JUDGE BARNETT: I don't need a narrative. I just want you to state your objection.

MR. JANOWITZ: Thank you.

JUDGE BARNETT: And it is overruled. I will let him ask this specific question once.

THE WITNESS: I did not specifically analyze Amazon's list of technological contributions

and how they relate to this proceeding or anything else right now.

BY MR. SAMAY:

Q. All right. And you didn't offer any opinion regarding whether the Copyright Owners' proposal reflected the relative role of Amazon with respect to its capital investment, the risk that it bore, or its contributions to opening new markets, is that correct?

A. I would have to look back in my statement, but I believe I may have said something to its contributions to opening new markets.

Q. Okay. And, again, I will refer you to your deposition at page 356. And I will direct you to line 8. Let me know when you are there.

A. Yeah.

Q. It is up on the screen. Did I ask you at your deposition:

"Question: Did you offer any opinion with respect to the Copyright Owners' proposal reflected the relative role of Amazon with respect to the technological contributions, its capital investment, the risk that it bore, or the contributions to the opening of new markets, did you?"

And didn't you answer: "I didn't specifically do that with respect to Amazon."

MR. JANOWITZ: I believe -- objection. This is improper impeachment because it is consistent with the testimony.

JUDGE BARNETT: His answer on the witness stand a few minutes ago was he believed there was some reference in his written statement to it. He didn't cite it. This is a proper question. Overruled.

THE WITNESS: We could look for the reference.

JUDGE BARNETT: There is no pending question.

THE WITNESS: Oh, okay. Sorry.

BY MR. SAMAY:

Q. Now, Professor Gans, you also don't offer any opinion regarding whether there would be any disruption to the structure of Amazon's product offerings caused by the Copyright Owners' proposal, do you?

A. I didn't -- I didn't offer any in my direct statement, no.

Q. Okay. And if a new regulatory structure made it too costly for Amazon to offer a product

like Amazon Prime -- are you familiar with Amazon Prime?

A. I am.

Q. Okay, then customers would have to choose whether to join a different service, consume music in a different way, leave the market altogether or perhaps engage in illegal streaming, wouldn't they?

A. If that -- you were saying are they not going to offer Amazon Prime any more?

Q. Yeah. If the new regulatory structure made it uneconomical for Amazon to continue offering Amazon Prime --

A. Yes.

Q. -- the consumers would have to either find a new service, decide to consume something different, leave the market altogether, or perhaps even engage in piracy, correct?

A. So let me first say that I find the premise of the question extraordinary, but if any service as a result of some change here found that they wanted to withdraw from the interactive streaming component of their business, the customers would likely go to one of the other providers in the market.

Q. Would the withdrawal of Amazon Prime

Music be disruptive to Amazon?

A. Would the withdrawal of Amazon Prime Music be disruptive to Amazon?

Q. Yeah.

A. It depends what you mean by the word "disruptive." Would it be disruptive to the individual who is currently heading up Amazon Prime Music? Sure.

Q. Would you consider it disruptive to Amazon?

A. No. Amazon exits businesses all the time and seem to be doing quite well with their founder being the second richest person in the world.

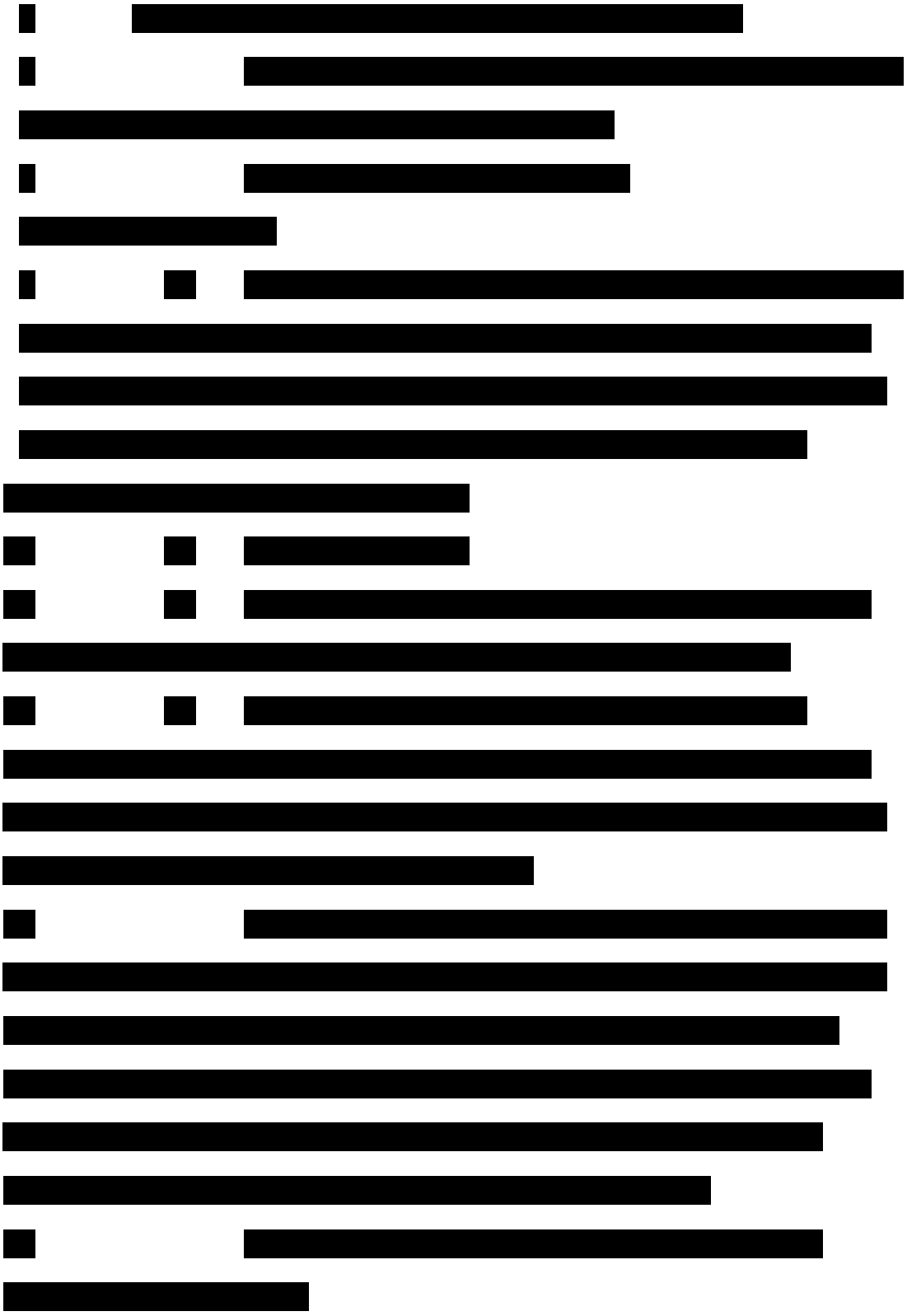
Q. I am going to direct you to your deposition once, again, to page 352, starting at line 2. And at your deposition I asked you if those 6 million subscribers --

MR. ELKIN: Open. You might want to call for restricted session. I apologize.

MR. SAMAY: Thank you. I only have another minute or two.

JUDGE BARNETT: The hearing room will be closed momentarily.

(Whereupon, the trial proceeded in confidential session.)

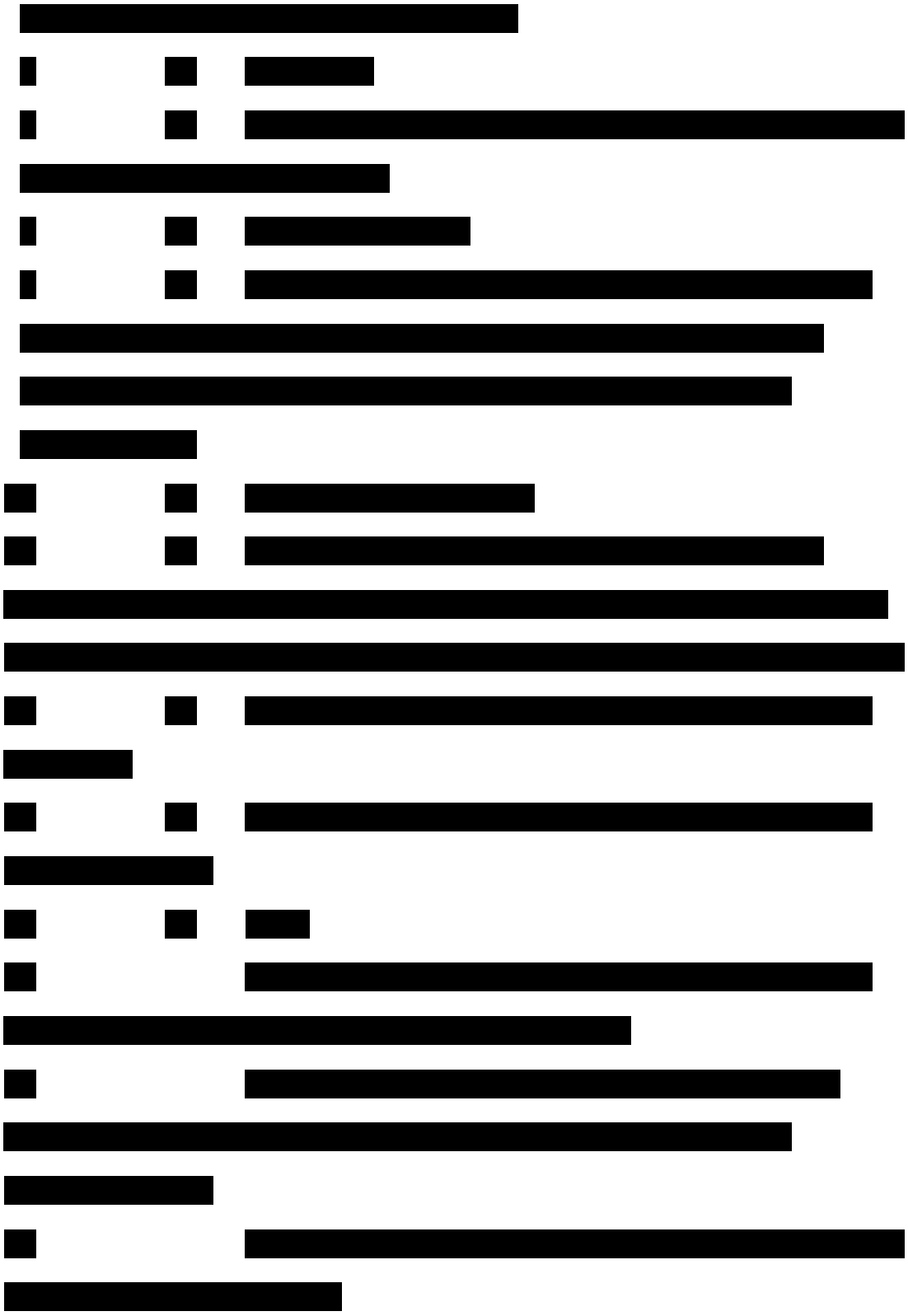


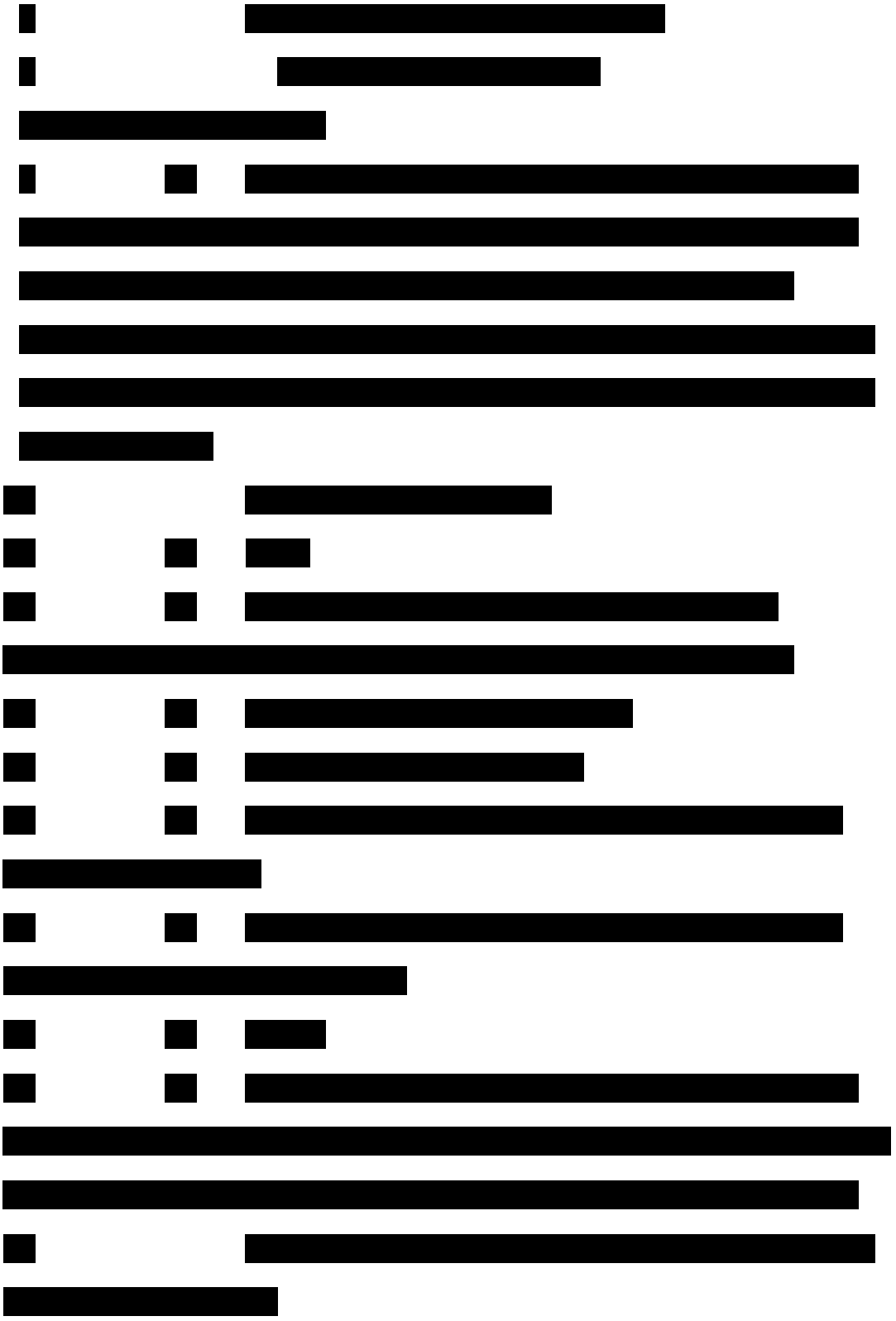
[redacted]

[redacted]

[redacted]

[redacted]





[redacted]

[redacted]

PUBLIC VERSION

Before the
COPYRIGHT ROYALTY BOARD
LIBRARY OF CONGRESS
Washington, D.C.

In the Matter of: DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	Docket No. 16–CRB–0003–PR (2018–2022)

WITNESS STATEMENT OF DAVID M. ISRAELITE

1. My name is David M. Israelite. I am President and Chief Executive Officer of the National Music Publishers' Association ("NMPA").

2. I submit this statement to set forth the proposal of the NMPA and the Nashville Songwriters Association International (collectively, "Copyright Owners") in the above-captioned proceeding to set statutory mechanical rates and terms for physical product and digital phonorecords for the period 2018-2022 (the "Proceeding").

3. I further submit this statement to explain why the current statutory mechanical rates and terms for interactive streams and limited downloads, and related products and configurations currently described in 37 C.F.R. Subparts B and C ("Subpart B and C Configurations") should be modified as the Copyright Owners propose, and why doing so would further the objectives set forth in Section 801(b) of the Copyright Act.

I. Professional Background

4. I received a Bachelor's Degree from William Jewell College in 1990, and a Juris Doctor from the University of Missouri in 1994. After law school, I practiced as a commercial litigator at the firm of Bryan Cave, LLP, in Kansas City, Missouri for three years.

5. In 1997, I moved into the public sector to work for Missouri Senator Kit Bond, becoming the youngest Administrative Assistant in the U.S. Senate. I also served as the campaign manager for Senator Bond's successful re-election campaign in 1998. From 1998 until 2001, I served as Director of Political and Governmental Affairs for the Republican National Committee.

6. I was appointed to the Department of Justice in 2001, and served as Deputy Chief of Staff and Counselor to the Attorney General of the United States until 2005. In this capacity I helped manage the Department's 112,000 employees and $22 billion annual budget. In addition to my general management responsibilities, I served as the Attorney General's personal advisor on all legal, strategic and public affairs issues. In 2004, I was named Chairman of the Department's Task Force on Intellectual Property. The Task Force was established that year to help the Department strengthen and improve efforts to combat the theft of intellectual property both nationally and internationally. In that position, I worked closely with other governmental offices and gained a first-hand appreciation for the importance of protecting the nation's valuable intellectual resources.

7. I was named President and CEO of the NMPA in 2005, a position I continue to hold today. In that capacity, I have focused my efforts on both legal and legislative initiatives aimed at advancing the interests of the U.S. music publishing industry and its songwriting partners. To those ends, I frequently contribute op-eds to various music industry trade publications and am often engaged to speak at conferences, and on panels, radio programs and podcasts regarding various issues confronting the music industry. *Billboard Magazine* has on three occasions named me to its annual "Power 100" list, which purports to identify the most influential executives in the music industry. And I have guided the NMPA's efforts in two prior

proceedings before the Copyright Royalty Board: *Phonorecords I* in 2006[1] and *Phonorecords II* in 2011.[2]

II. The Role of the NMPA

8. The NMPA was founded in 1917. For almost a century, the NMPA has served as the leading voice representing all American music publishers and their songwriting partners before Congress, in the courts, in the music, entertainment and technology industries, and to the listening public.

9. In 1927 the NMPA founded the Harry Fox Agency LLC ("HFA"), which the NMPA operated as a wholly-owned subsidiary for over eight decades.[3] In September 2015, the NMPA sold HFA and re-formed as a non-profit trade organization under § 501(c)(6) of the U.S. Tax Code. Whereas the NMPA was historically supported by revenue realized by HFA for issuing mechanical licenses, as of 2014 the NMPA is completely funded by dues collected from its membership (a business decision forced by the decline of mechanical licensing revenue collected by HFA).

10. The NMPA's membership includes music publishers affiliated with a record label or a larger entertainment company (so-called "majors") as well as independently-owned and operated music publishers (so-called "independents" or "indies") both large and small, of all catalog and revenue sizes. Taken together, compositions owned or controlled by NMPA members account for the vast majority of musical compositions licensed for mechanical uses in

---

[1] *Matter of Mechanical & Digital Phonorecord Delivery Rate Adjustment Proceedings*, Docket No. 2006-3 CRB DPRA.

[2] *Matter of Adjustment or Determination of Compulsory License Rates for Making and Distributing Phonorecords*, Docket No. 2011-3 CRB.

[3] HFA licenses and collects royalties on behalf of music publishers for the mechanical rights in copyrighted musical compositions that are the subject of this proceeding. HFA is the largest such U.S. agency active in issuing such mechanical licenses.

the United States, including reproduction and distribution in the form of interactive streams, downloads and physical phonorecords.

11. The NMPA's primary objective is to protect and enhance the value of our members' intellectual property rights, and to shape a business environment that will foster both the creative and financial success of our members. We seek to do so through legislative, litigation and regulatory efforts, and by representing our members in industry negotiations.

12. Our recent legislative and lobbying initiatives have focused on challenging what I view as outdated laws enabling government regulation and oversight of the music publishing industry. These efforts have included seeking revisions to the Copyright Act, including the terms and provisions of the Section 115 compulsory license itself, and the Section 801(b) rate setting standard that is at the core of this Proceeding. They have also included seeking protection from consent decrees and standards that regulate royalties and licensing of the public performance rights in musical compositions.

13. Our lobbying efforts are generally met with fierce resistance from groups with resources well beyond those currently available to the music publishing industry. By way of example, in 2015 alone, the participants representing the interests of licensees in this Proceeding outspent the NMPA on lobbying efforts by a total of $33,850,000 to $715,000, with contributions as follows: Apple ($4,480,000); Amazon ($9,070,000); Google ($17,030,000); Pandora ($1,280,000); and Spotify ($740,000).

14. As we are doing in this Proceeding, the NMPA has also presented the position of music publishers and songwriters in all Section 115 royalty rate-setting negotiations, proceedings and related hearings. Before *Phonorecords I*, *II* & *III*, we represented the interests of music publishers and songwriters in negotiations and formal rate-setting proceedings in the 1980s, as

well as the physical and digital rate-setting negotiations and proceedings in the mid-to-late 1990s.

15. The last decade has been a time of tremendous change in the music industry. Ten years ago, the NMPA's efforts were focused primarily on fighting and prohibiting the outright theft of music and curbing rampant piracy enabled on unauthorized, unlicensed websites by way of lawsuits grounded on claims of copyright infringement. The NMPA was successful in those efforts.

16. While the NMPA continues to engage in efforts to identify and curb the infringement of our members' works on the Internet, our focus has expanded to confront a wide range of issues regarding the use of musical works in the digital environment by emerging new services – including the services operated by the participants in this Proceeding – that use music either pursuant to a license, or that claim the protection of the so-called "safe harbors" of the Digital Millennium Copyright Act (the "DMCA"). It has been a constant challenge to obtain a fair share of the enormous value that our members' musical works have created for these services.

17. Indeed, it is of paramount importance to me to see that our publisher members and their songwriting partners are provided fair market royalties when their musical compositions are exploited. To that end, we have negotiated numerous model agreements with online music service providers, including YouTube, Maker Studios, Genius (formerly known as Rap Genius) and Flipagram. Very often these agreements will take the form of payments for past unauthorized uses, along with licenses to enable new uses on a going-forward basis. Our negotiation of these agreements, which our members may choose to opt into and thereby license these service providers the rights to use their works, is a significant opportunity for our members

– particularly our smaller music publisher members – as it enables them to share in the value created by new business models while sparing them the time and expense of having to negotiate directly with these service providers. It is also of value to the service providers as they are spared the transaction costs of negotiating terms with hundreds of publishers. Through our negotiation and structuring of these model agreements, the NMPA has helped create a healthy digital marketplace for the lawful use of our members' musical works.

18. Consistent with these goals, the NMPA is also active on a policy level in shaping the development of copyright law. For instance, the NMPA participated in briefing the U.S. Department of Justice regarding proposed modifications to the ASCAP and BMI consent decrees. The NMPA has also responded to Notices of Inquiry issued by the Copyright Office on important topics including the treatment of so-called orphan works (where ownership information cannot be identified), the current effectiveness of the DMCA, and the Copyright Office's comprehensive 2015 study on "Copyright and the Music Marketplace."

III. The Copyright Owners' Current Proposal

19. Let me next turn to the Copyright Owners' proposal for rates and terms for the statutory mechanical license.

A. Rates and Terms for Subpart A Configurations

20. On or about June 8, 2016, the Copyright Owners reached a settlement with Universal Music Group ("UMG") and Warner Music Group ("WMG") with respect to the rates and terms for Subpart A configurations (physical phonorecords, permanent digital downloads and ringtones) (the "Subpart A Settlement").

21. On or about June 15, 2016, the parties to the Subpart A Settlement moved the Copyright Royalty Judges ("CRJs") to adopt the rates and terms contained in the Subpart A

Settlement as the rates and terms for all licensees of Subpart A Configurations (or at a minimum, for Subpart A Configurations made by UMG and WMG).

22. On July 25, 2016, the CRJs published the Subpart A Settlement in the Federal Register for comment.

23. The American Association of Independent Music ("A2IM"), representing a diverse group of independently-owned American record labels, submitted comments supporting the Subpart A Settlement.

24. The only parties submitting comments in opposition to the Subpart A Settlement were Sony Music Entertainment ("SME") and George D. Johnson. SME was not opposed to, and in fact expressed support for, the rates contained in the Subpart A Settlement. SME's sole objection was with respect to certain aspects of the late fee term in 37 C.F.R. § 385.4. SME has since settled with the Copyright Owners with respect to this issue, and now approves of the Subpart A Settlement in all respects. On October 28, 2016, SME and the Copyright Owners filed a motion by which SME withdrew its prior objection, and SME and the Copyright Owners requested that the CRJs adopt the Subpart A Settlement industry-wide as the statutory rates and terms for all Subpart A Configurations for the coming rate period.

25. The Copyright Owners (representing the vast majority of licensors of mechanical rights for Subpart A Configurations) and SME, UMG, WMG and A2IM (representing the vast majority of licensees of those rights) have now all expressed support for adoption of the Subpart A Settlement as the rates and terms for all licensees under Section 115, and no other entity has to date filed an opposition to the Subpart A Settlement (other than Mr. George D. Johnson, who represents no interests beyond his own in this Proceeding and has proposed a rate of at least 52¢ per copy, which, in the NMPA's view, is not supportable at this time).

26. Given the broad, industry-wide support for the rates and terms contained in the Subpart A Settlement, the Copyright Owners propose the CRJs adopt them for all Subpart A Configurations made by all licensees.

B. Rates and Terms for Subpart B and C Configurations

27. The Subpart B & C Configurations are licensed by digital service providers ("Digital Sevices"), including, most notably, the five remaining licensee participants in this Proceeding: Amazon, Apple, Google, Pandora and Spotify. The Copyright Owners have been unable to reach an agreement with the Digital Service participants on rates and terms for Subpart B & C Configurations.

28. The Subpart B Configurations are all formats for delivering or offering interactive streams and/or limited downloads (as defined in the regulations). Subpart B Configurations include: (a) standalone non-portable (i.e., tethered to a computer) subscription streaming-only services; (b) standalone non-portable subscription streaming and limited download services; (c) standalone portable (i.e., accessible on mobile or other Internet-enabled devices) subscription streaming and limited download services; (d) bundled subscription services which are streaming and limited download services bundled with another product or service (such as a mobile phone); and (e) free to the user non-subscription advertiser supported services. *See* 37 C.F.R. §§ 385.13(a)(1) to (5).

29. As discussed below, in the Copyright Owners' Introductory Memorandum and Proposed Rates and Terms, and in witness statements submitted by the Copyright Owners, because we believe each interactive stream or play of a limited download of a musical work has an inherent value that should not depend on the business models or pecuniary interests of the

Digital Services, we think the same rates and rate structure should apply to each of these Subpart B Configurations.

30. The Subpart C Configurations also predominantly constitute different methods for delivering or offering interactive streams and/or limited downloads. These include: (a) "limited offerings," which are subscription interactive streaming or limited download services where the consumer has access to a limited number of sound recordings relative to the marketplace or cannot listen to individual sound recordings on demand; (b) "paid locker services," which permit users paying a subscription fee to stream from the Digital Service's server copy a sound recording embodying a musical work that the user has demonstrated is present on the user's hard drive; (c) "purchased content locker services," which permit users to stream from the Digital Service's server copy a sound recording embodying a musical work that the user has demonstrated he or she has purchased as a Subpart A Configuration; and (d) "mixed service bundles" to the extent they bundle locker services or limited offerings with permanent downloads, ringtones or non-music products or services (such as a phone). *See* 37 C.F.R. § 385.21.[4]

31. Again, because we believe each interactive stream or play of a limited download of a musical work has an inherent value that should not depend on the business models or pecuniary interests of the Digital Services, we think the same rates and rate structure should apply regardless of the Configuration.

32. While the details of the Copyright Owners' rate proposal are set forth in the Copyright Owners' Proposed Rates and Terms, the basic elements of the proposal are as follows:

[4] The one other Subpart C Configuration – "music bundles" – are offerings of two or more Subpart A products to end users as part of one transaction, and do not involve interactive streams or limited downloads. *See* 37 C.F.R. § 385.21 (defining "music bundles").

Rates.

For all interactive streams and limited downloads, a rate equal to the greater of:

(1) $0.0015 per-play of an interactive stream or limited download (for mechanical rights only) (the "per-play" rate herein); and

(2) $1.06 per-end user of an interactive streaming or limited download service per month (for mechanical rights only) (the "per-user" rate herein).

Term.

Late Fee: Without affecting any right to terminate a license for failure to report or pay royalties as provided in § 115(c)(6), late fees shall be assessed at 1.5% per month (or the highest lawful rate, whichever is lower) from the date payment should have been made (the twentieth day of the calendar month following the month of distribution) to the date payment is actually received by the Copyright Owner.

C. The Rates and Rate Structure Proposed by the Copyright Owners Recognize the Inherent Value of a Musical Work

33. The current statutory rates and rate structure were negotiated ten years ago when the business models for delivering interactive streams and limited downloads were experimental and no one was certain how they might develop. While those rates and that structure reflect the uncertainty inherent in a developing industry, it is now clear that they have outlived their utility. Under the current rate structure, the amounts paid to songwriters and publishers for their intellectual property vary with and depend upon how a Digital Service chooses to structure its business. The result is that the songwriters and publishers are undercompensated and end up subsidizing the consumer and market share acquisition and other business schemes of the Digital Services. The rates proposed by the Copyright Owners eliminate this inherent unfairness and recognize that each play of an interactive stream or limited download has an inherent value that should not be tied to the business model of the Digital Service.

34. Take Spotify, for example. Spotify offers a free-to-the-consumer service that provides access to the same vast catalog of songs as its paid subscription service. It does not limit free access to this catalog to a period of time, or to just a portion of the catalog. Users can stream the same music in the free tier as long as they occasionally listen to an advertisement. While Spotify is obligated to pay a portion of the ad revenue to the owners of the music, it deliberately chooses not to sell too many ads because it wants to attract as many consumers as it can to grow its market share and enterprise value.

35. Similarly, Google, arguably the most ubiquitous presence on the Internet, maintains its own interactive streaming service through its Google Play network, which offers subscriptions at $9.99 a month and with significant discounts available for users participating in family subscription plans.[5] This feature helps Google maintain users engaged within its vast network of online features, including its search engine, email service and even GPS mapping application that taken together have created one of the valuable corporations in the world.[6] That is a value music publishers and songwriters do not share in under the current regulatory framework, but a value they have helped create nonetheless.

36. Apple likewise sells a subscription interactive streaming and limited download service for $9.99 per month.[7] The service permits each consumer to stream as many songs as he or she wishes. However, Apple provides significant discounts from the $9.99 price – 50% or higher – to attract certain customers such as students or individuals on a "family plan."[8] Apple's

---

[5] Google Play Music, https://play.google.com/music/listen#/now (last visited Oct. 23, 2016).

[6] Paul R. La Monica, *Google Is Worth More Than Apple Again*, CNN Money (May 12, 2016), http://money.cnn.com/2016/05/12/investing/apple-google-alphabet-most-valuable.

[7] Membership, Apple Music, http://www.apple.com/apple-music/membership/ (last visited Oct. 17, 2016).

[8] *Id.*

discounts cause the revenue-based royalty payable to songwriters and publishers to be slashed, while at the same time the songwriters and publishers do not benefit from the fact that students and families likely stream more music than a basic individual subscriber. Moreover, when Apple discounts music, it further benefits Apple by growing its customer base, which it can leverage to sell more Apple products, but the songwriters and publishers do not share in that benefit either.

37. Amazon's plan to subsidize its business at the expense of songwriters and publishers is perhaps even more direct. Amazon has launched a subscription music service that offers the same expansive catalog as Apple's and Spotify's services, yet reduces the monthly subscription price by 60% (to $3.99 from $9.99) for customers who stream through Amazon's Echo Bluetooth speaker.[9] Of course, Amazon will not be sharing its speaker revenues with songwriters and publishers, just as it has not shared with songwriters and publishers any of the money that its subscribers pay for Amazon Prime subscriptions, even though it provides free music streaming as an inducement to purchase a Prime subscription.

38. With each Digital Service slashing subscription prices and offering greater discounts and incentives to attract customers – to gain market share not only to sell more subscriptions but also to sell consumers other products or services – revenues will continue to decrease, and publishers and the songwriters they represent will earn less and less. Copyright Owners have been and will continue to be subsidizing the largest companies in the world in their highly calculated customer acquisition strategies.

---

[9] Now Streaming: Amazon Music Unlimited, Amazon Press Releases (Oct. 12, 2016), http://phx.corporate-ir.net/phoenix.zhtml?c=176060&p=irol-newsArticle_pf&ID=2211067; Hannah Karp & Laura Stevens, *Amazon's Music-Streaming Service Competes on Price and Robotic Assistance*, The Wall Street Journal (Oct. 12, 2016), http://www.wsj.com/articles/new-amazon-music-streaming-service-costs-echo-speaker-owners-4-a-month-1476255600.

39. Each of these Digital Services effectively pay to the publishers and songwriters a different per-play royalty. That makes no sense. Indeed, tying the statutory rate to a narrowly defined version of the Services' revenues (one that excludes sources of revenue such as the sale of other products linked to the sale of the music) as opposed to users' consumption – the basis of most statutory rates, including the rates for Subpart A products such as downloads and ringtones – results in publishers and songwriters being paid less and less on an effective per-play basis as consumption increases. Because there is no minimum per-play payment, and because I understand that in some cases the number of streams per month is growing at a more rapid rate than the revenue, a songwriter can have more streams than in a prior month and actually make less money.[10] It is counter-intuitive for something that is so highly valued that it gets played more and more to earn less and less.

40. In sum, it is clear that a revenue-based royalty rate structure, without a per-play value, leaves copyright owners vulnerable to the ulterior motives of the Digital Services in entering the interactive streaming market. A per-play value is, therefore, an essential component of a fair and reasonable rate.

41. As numerous witnesses will describe, the Copyright Owners' proposed per-play rate is fair, supported by existing benchmark agreements and sound economic theory, and satisfies the Section 801 criteria to be used in determining appropriate statutory royalty rates in this Proceeding.

42. The Copyright Owners also believe it is important that the rate structure include a per-user royalty as part of a "greater of" calculation. The publishers and songwriters provide

[10] *See* Jeff Price, *The More Money Spotify Makes, The Less Artists Get Paid…*, Digital Music News (June 11, 2015), http://www.digitalmusicnews.com/2015/06/11/the-more-money-spotify-makes-the-less-artists-get-paid/.

value to the Digital Services and their end users by making all of their musical works available on these Services because the ability to access any of those works at any given time attracts users regardless of which works a particular user streams each month or the level of streaming by that user that month. Each end user account has an inherent value. The user is secure in knowing that all the songs offered by the Digital Service can be accessed at any time or place. Users are willing to and do pay Digital Services for such access, and advertisers are willing to and do pay Digital Services to sell their products and services to those users, who are only willing to listen to the ads because they want the access to the music.

43. Another reason a per-user rate is needed is technology often begets other, less benign technology. A host of "stream ripping" websites and applications have been developed that enable users to convert interactive streams into permanent downloads. In fact, just last month, a group of major independent record labels, backed by the Recording Industry Association of America, the British Recorded Music Industry and other industry lobbyists, sued YouTube-mp3.org, a heavily-trafficked website with tens of millions of users, which facilitates copyright infringement by enabling users to strip the audio from YouTube videos and convert the file to a permanently-playable .mp3 file.[11] Also last month, a product called "The Mighty" was released. The Mighty is a handheld .mp3 player that enables users of Spotify's interactive streaming subscription service to permanently download playlists – up to 48 hours of music in total. Once such playlists have been downloaded, the user can play them offline via the device,

[11] *See UMG Recordings, Inc. v. PMD Technologie UG d/b/a YouTube-mp3*, Docket No. 2:16-cv-07210 (C.D. Cal. 2016); David Kravets, *RIAA Takes on Stream-ripping in Copyright Lawsuit Targeting YouTube-mp3*, Ars Technica (Sept. 26, 2016), http://arstechnica.com/tech-policy/2016/09/riaa-takes-on-stream-ripping-in-copyright-lawsuit-targeting-youtube-mp3/.

which means that the plays will never be counted, so their value will not be captured by a per-play payment.[12]

44. It is also important that the rate structure include a per-user rate even for the free, so-called "advertiser"-supported tier that some Digital Services offer. The royalties paid by such services should not be different from the royalties paid by subscription services. Both provide on-demand streams to users. To those users, the value of the stream is the same. The royalties paid to the publishers and songwriters for those streams (and for the value they provide to the service in creating and licensing all of the songs) should have nothing to do with how the Digital Service chooses to monetize or not monetize the songs that it licenses. If a record label wants to give away permanent downloads for promotional or other purposes, under Subpart A, it still has to pay the statutory mechanical royalty for the use and consumption of the underlying musical works. The Digital Services should have to do the same. Alternatively, they could sell enough advertisements to cover their mechanical licensing costs. The mere fact that they presently choose to operate their businesses by minimizing their revenues from advertising in order to maximize their customer base does not mean that the Copyright Owners should be required to subsidize their business model involuntarily.

45. For this reason, Copyright Owners' proposed regulations have defined "end users" to include all unique individuals or entities that have access to an offering regardless of whether they are paid subscribers or individuals who use a Digital Service's free tier. Digital Services should easily be able to track non-paying users by requiring users to sign up to use the service with an e-mail address, user name and password.

---

[12] *See* Raymond Wong, *Hands-on With The Mighty, An MP3 Player That Lets You Listen To Spotify Without A Phone*, Mashable (Sept. 22, 2016), http://mashable.com/2016/09/22/mighty-spotify-mp3-player/#AVwjdTwRCmqJ.

46. Again, as supported by the Copyright Owners' submission, the proposed per-user rate is fair, supported by existing benchmark agreements and sound economic theory, and satisfies the Section 801 criteria to be used in determining appropriate statutory royalty rates.

47. The Copyright Owners' proposed rate structure of the greater of a per-play and a per-user rate will also simplify the Digital Services' accountings to licensors and provide some greatly needed transparency under the compulsory license. The current rate structure makes it extremely difficult for songwriters and publishers to determine whether they are being paid correctly, as not only are the required calculations complex, but many of the required inputs are not easily verifiable by songwriters and publishers, and afford the Digital Services some discretion, for example, in allocating what portions of their revenue constitutes "service revenue." It is far simpler to calculate the number of plays and the number of end users in a given accounting period.

48. Finally, because each play has an inherent value, the Copyright Owners propose one rate for all forms of interactive steaming and limited downloading. Whether interactive streams and limited downloads or offered on a subscription basis, an advertiser-supported or other free-to-the-user or "promotional" basis, on a portable, non-portable or mixed use basis, via a "cloud" or "locker" service, or bundled with any other music or non-music product or service, the rate should be the same. For this reason, the Copyright Owners propose to simplify the existing Subparts B and C into a single set of rates and terms that do not differ based on offering type.

D. A Late Fee Should Also Be Imposed

49. The timely payment of statutory license fees continues to be a persistent problem. Although the current statute and accompanying implementing regulations set out a detailed

timeframe for payment of royalties, not all licensees pay on time. In fact, mechanical royalty payments by the Digital Services are chronically late. The compulsory license is not meant to be an interest-free loan. Individual songwriters should not have to act as financiers for Apple, Google and Spotify.

50. Because of the persistently late payment of mechanical royalties, the CRJs in *Phonorecords I* adopted the Copyright Owners' proposal that royalty payments that are not timely made be subject to a late fee of 1.5% per month (or the highest lawful rate), calculated from the date on which payment was due until the date it is received by the Copyright Owner.

51. Copyright Owners proposed that the late fee apply to all licensees. However, because the participants reached a settlement with respect to Subpart B and C rates and terms, the CRJs placed the late fee provision in Subpart A (at 37 C.F.R. § 385.4). The Copyright Owners do not believe that it was the intent of the CRJs to limit the provision to only licensees of Subpart A Configurations, but rather, intended it to apply to all Section 115 licensees.

52. Regardless of the CRJs' intent at the time, there is no reason why one group of licensees (record labels) should be subject to a late fee provision while another group of licensees (Digital Services) should not be subject to such a provision. As the CRJs determined in *Phonorecords I*, a late fee is appropriate to "'provid[e] an effective incentive to the licensee to make payments timely,'" and that a fee of 1.5% per month is not "'so high that it is punitive'" and achieves the correct balance.[13]

---

[13] Final Rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding ("Phonorecords I Final Rule"), Docket No. 2005-3 CRB DPRA, 74 Fed. Reg. 4510, 4510 (Jan. 28, 2009) (quoting Final Rule, Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services ("SDARS I Final Rule"), Docket No. 2006-1 CRB DSTRA, 73 Fed. Reg. 4080, 4099 (Jan. 24, 2008)).

53. Copyright Owners therefore propose that the regulations be amended to clarify that the late fee already contained in 37 C.F.R. § 385.4 applies with equal force to Digital Services and other entities offering interactive streams or limited downloads. Doing so will discourage these chronic late payments and, hopefully, get songwriters paid on a timely basis.[14]

IV. An Increase in Mechanical Royalty Rates is Warranted

54. There are myriad reasons why the mechanical royalty rates that are presently being paid by the Digital Services to the publishers and songwriters should be increased. While some of those reasons are alluded to in Section III above, below I will discuss several specific reasons why the modest increase proposed by the Copyright Owners is necessary and warranted, and furthers the Section 801(b) objectives.[15]

A. The Compulsory License Depresses Rates that Copyright Owners Could Obtain In The Free Market

55. While I recognize that the CRB's mandate is to determine reasonable terms and rates of royalty payments under the Section 115 compulsory license, and not to decide whether the Section 115 license continues to be necessary a century after its inception, I feel it is important to at least briefly address the history of the compulsory license, and to express my view that it is no longer necessary and is, in fact, disadvantageous – a view that has been

[14] Note that the late payment fee is not intended to be in lieu of, but rather a supplement to, the Copyright Owners' statutory right to terminate a compulsory license for failure to account or pay royalties on time, a right which often must be exercised. *See* 17 U.S.C. § 115(c)(6).

[15] Section 801(b)(1) of the Copyright Act sets forth the following objectives that the CRJs should look to achieve in setting reasonable rates and terms under the statutory license: (a) to maximize the availability of creative works to the public; (b) to afford the copyright owner a fair return for his or her creative work and afford the copyright user a fair income under existing economic conditions; (c) to reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to .the opening of new markets for creative expression and media for their communication; and (d) to minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.

expressed by the Register of Copyrights. The reason I feel it is important for me to do so is that I believe it bears upon the Section 801(b) factors.

56. The compulsory license to make a mechanical reproduction of a musical work is over 100 years old. *See* Copyright Act of 1909, Public Law No. 60-349, 35 Stat. 1075 (1909). The need for this compulsory license has long been the subject of debate, and in the digital age that debate has become even more pronounced.

57. The compulsory license was born from Congress' concern about purportedly anti-competitive behavior between one aggressive player piano manufacturer – the Aeolian Company – and the music publishing community. The concern was that the Aeolian Company was entering into exclusive licenses to reproduce mechanically a significant number of musical compositions on player piano rolls.[16] The concern about anti-competitive activity could, and probably should, have been remedied by direct action taken against the Aeolian Company. Anti-trust enforcement today is much more sophisticated and focuses on the parties actually engaged in the alleged anti-competitive activity, but that was not the approach taken by Congress in 1909. The purported monopoly in 1909, whether real or imagined, was regarded as a serious threat at a time when effective anti-trust regulation was still in its infancy.[17] Rather than focusing on punishing the player piano company for the alleged anti-competitive behavior, Congress instead punished all songwriters and music publishers by implementing the compulsory license, to the

---

[16] *See* Statement of Marybeth Peters, The Register of Copyrights, Before the Subcommittee on Courts, the Internet and Intellectual Property of the House Committee on the Judiciary, United States House of Representatives, 108th Congress, 2d Session (March 11, 2004) [hereinafter Peters Statement].

[17] Russell Sanjek, *Pennies From Heaven: The American Popular Music Business In The Twentieth Century* 22 (1996).

benefit of the Aeolian Company, and really all subsequent distributors, including the Digital Services participating in the Proceeding a century later.[18]

58. Historical evidence supports the conclusion that the Section 115 compulsory license was adopted more as a political compromise to ensure passage of the 1909 Copyright Act, than as a sensible or fair approach to music licensing. Many in the songwriting and music publishing community strongly opposed the compulsory license at the time, including such songwriting luminaries as John Philip Souza and Victor Herbert – both of whom testified against the bill in Congress.[19] Songwriters and music publishers viewed the compulsory license as an unprecedented and unwarranted form of governmental price control and manipulation of an otherwise functioning music marketplace. They recognized the compulsory license would undercut their interests in a free and fair market in which they could control the fruits of their creative and financial investments. As documented in the Copyright Owners' submissions on behalf of music publishers and songwriters, these concerns are all too real in the present day.

59. Several rate proposals were debated in Congress in 1909. Some legislators proposed a flat 2¢ rate, others a tiered system and others a 10% rate for certain categories of works. The ultimately successful bill set the rate at a flat 2¢ and was accompanied by a Congressional report indicating that the compulsory license provision was "a compromise to placate the expressed fears regarding the Aeolian Co."[20] As a result, the Aeolian Company reaped the benefit of a lower compulsory license rate than their "exclusive" arrangement with

[18] *Id.* at 23.

[19] *Id.* at 22.

[20] *Id.* at 29 (quoting Senator Herbert in S. Rept. 1782, 71st Congress, 3d Session, pp 26-27 (1931)).

publishers that triggered the concern initially.[21] Consequently, the player piano companies in 1909 – like music services today – paid a below-market rate resulting from governmentally-imposed price controls.

60. These price controls continue to suppress the rates that songwriters and publishers are paid for the use of their property. Songwriters and publishers are essentially playing a game that favors the status quo. The statute instructs that the compulsory rate is to be determined in a manner that achieves certain policy objectives. *See* 17 U.S.C, § 801(b). But because the rates themselves cannot be derived from the Section 801(b)(1) policy factors, the CRJs have recognized that a determination of a reasonable mechanical rate should "begin with a consideration and analysis of benchmarks and testimony submitted by the parties."[22] *See also* 17 U.S.C. § 115(c)(3)(D) ("In addition to the objectives set forth in section 801(b)(1), in establishing such rates and terms, the Copyright Royalty Judges may consider rates and terms under voluntary license agreements. . . ."). The problem is that the royalty rate contained in virtually any agreement that is made by a music publisher or songwriter with a licensee for rights subject to the compulsory license will be depressed by the availability of the compulsory license. Parties rarely will pay more than they need to pay and so, unless the licensee requires other non-compulsory rights or has other business reasons for paying more than the law may currently require, the statutory rate often acts as a ceiling on what can be achieved in direct negotiations undertaken in the shadow of the compulsory license.

61. Such a shadow is long, and influences not only direct negotiations between copyright owners and licensees, but also negotiations between and among industry stakeholders made in the context of the Phonorecords rate-setting proceedings. The existing rates, which in

[21] *Id.* at 22-23.

[22] SDARS I Final Rule, 73 Fed. Reg. at 4084.

this context were agreed in a negotiation made nearly ten years ago when the streaming industry was in its infancy (*see* Section IV.C, *infra*), are themselves put forth as a "benchmark," supported by direct deals made at that very same statutory rate. The result is something of a closed loop making it very difficult for copyright owners to meaningfully change the existing statutory rates either in negotiations or in rate proceedings.

62. The Copyright Office has recognized on numerous occasions, including most recently in its comprehensive 2015 Music Marketplace report, that the compulsory license is obsolete and that mechanical licensing should be left to the free market. In that report, the Office, after taking submissions from all interested parties, concluded that the Section 115 compulsory license "should become the basis of a more flexible collective licensing system" that would permit individual music publishers "to opt out" of the compulsory license.[23] As envisioned by the Copyright Office "the mechanical opt-out right would extend to interactive streaming rights and downloading activities – uses where sound recording owners operate in the free market . . . ."[24]

63. I strongly agree with the Copyright Office's conclusions. Between the compulsory mechanical license and the antitrust consent decrees requiring that royalty rates for performance licenses issued by ASCAP and BMI be set by a federal "rate court," over 70% of a

[23] U.S. Copyright Office, Copyright and the Music Marketplace, at 5 (Feb. 2015).

[24] *Id.*; *see also* Peters Statement ("While the Section 115 statutory license may have served the public interest well with respect to a nascent music reproduction industry after the turn of the century and for much of the 1900's, it is no longer necessary and unjustifiably abrogates copyright owners' rights today. . . . .[T]he Section 115 license should be repealed and that licensing of rights should be left to the marketplace, most likely by means of collective administration.").

songwriter's income comes from rates set by the government, making songwriting one of the most heavily regulated professions in the United States.[25]

64. The CRJs should recognize and factor into their setting of reasonable rates that provide copyright owners a fair return for the use of their works that the existence of the statutory license has served to unfairly (and unnecessarily) abrogate their rights and depress the rates that they would otherwise be able to obtain in a free market.

B. An Increase In The Statutory Rate Is Needed To Afford Songwriters and Publishers a Fair Return for Their Work and the Value They Provide to Digital Services and Their Customers

65. Interactive streaming and limited download services provide consumers with something of incredible value that they never had before: instant access to virtually every song ever recorded, on a device that can be carried in your pocket (or on virtually any other computer, music player or speaker). Music publishers and their songwriters provide an essential element of this value: their catalogs of songs. Without these songs there would be no recordings, much less interactive music streaming or download services.

66. Songs have value, and that value should be recognized under the directives of Section 801(b). Songs cost money (and time) to create. As described in the statements of the songwriter witnesses, songwriters labor long and hard to create songs to which people will want to listen And as detailed in the statements of the music publisher witnesses, publishers invest substantial amounts of money to, among other things: discover songwriters; support songwriters so that they can write full-time; provide creative support to songwriters so they can write better songs; market, promote and license those songs; and track, collect and process the income earned from those songs. None of this happens cheaply or easily. Publishers and songwriters invest the

[25] CO Ex. 1.1.

time and money needed to create these songs because they expect that they will be able to receive at least a fair return for their efforts. That expectation is becoming more and more difficult to meet in the digital streaming environment. Nonetheless the creative contributions and capital investment of songwriters and music publishers have played an essential role in the expansion of the new market represented by the rapid, unparalleled growth of interactive streaming and limited downloading. *See* 17 U.S.C. § 801(b)(1)(C).

67. There is consensus within the industry that there is more music being accessed from more sources than at any time in history, on a scale of use that past generations, reliant principally on physical media for the delivery of music, could not possibly have envisioned. While one would think the proliferation of services that can place in one's pocket virtually every song ever written would generate greater revenues for the songwriters and publishers who create all of those songs, that has not been the case.

68. A large volume of these countless billions of uses directly implicate the mechanical right of reproduction and distribution and as such require the payment of mechanical royalties that are at issue in this Proceeding. Nonetheless, mechanical royalties paid to music publishers have continued to decrease year after year in recent history, to a point where I have never seen mechanical royalties, as a percentage of revenues paid to the music publishing industry, lower than they are presently.

69. In 2013, for instance, mechanical revenue accounted for [redacted] of music publisher income; in 2014 it [redacted]; and in 2015 it [redacted] of music publisher revenue.[26] To my understanding, this was a continuation of a trend that has developed

[26] CO Ex. 1.2; CO Ex. 1.3; CO Ex. 1.4.

over the last statutory rate period. It's hardly a coincidence that such decline coincided with the rise in popularity of interactive streaming services.

70. Total interactive streaming (by number of streams) increased by 54% from 2013 to 2014, and by an additional 92.8% from 2014 to 2015.[27] At the same time, the sale of digital albums decreased by 9.4%, and digital track sales decreased by 12.5% from 2013 to 2014.[28] Digital album sales and digital track sales decreased by an additional 2.9% and 12.5%, respectively, from 2014 to 2015.[29] According to revenue information collected by the NMPA from its members on an annual basis, the total U.S. mechanical revenues for the songwriting and publishing industry decreased by 11.6% from 2013 to 2014, and by another 2.6% from 2014 to 2015.[30]

71. On a personal level, as President of the principal U.S. trade association representing the interests of songwriters and music publishers, I constantly hear from songwriters that, as a result of the shift to streaming and the concomitant low mechanical royalty payments from the streaming services, they cannot make a fair wage today.

72. At our annual meeting this year, we presented Sting with the NMPA's Songwriter Icon award. Sting reminisced about writing songs in a barely habitable apartment forty years ago and not knowing if anybody else would ever hear them. Now, he said there is "no greater feeling" than when he hears an audience sing one of his songs back to him when he is

---

[27] *See* 2014 Nielsen Music U.S. Report at 1, 8 (2015), *available at* http://www.nielsen.com/content/dam/corporate/us/en/public%20factsheets/Soundscan/nielsen-2014-year-end-music-report-us.pdf [hereinafter 2014 Nielsen Report]; 2015 Nielsen Music U.S. Report at 8 (2016), *available at* http://www.nielsen.com/content/dam/corporate/us/en/reports-downloads/2016-reports/2015-year-end-music-report.pdf.pdf [hereinafter 2015 Nielsen Report].

[28] 2014 Nielsen Report at 2.

[29] 2015 Nielsen Report at 7, 8.

[30] CO Ex. 1.1.

performing. Songwriting "is important work," he said. But, he added, he was grateful that he could make a living from his craft. "The same is not true for young songwriters starting out today," he lamented. "They can't make a fair wage."

73. Sting's sentiments have been echoed by many songwriters, some to me privately, and others in public forums, for those with access to the media.

74. Taylor Swift, for example, has been perhaps the most famous defender of songwriters against the devaluation of music by the streaming services. In June of 2015, when Taylor learned that Apple Music was planning to offer a free three-month trial to anyone who signed up for the service – during which Apple would pay no royalties to songwriters or artists – she wrote an "open letter" to the Silicon Valley giant critical of the policy. "This is not about me," she wrote. "Thankfully I am on my fifth album and can support myself, my band, crew, and entire management team by playing live shows. This is about the new artist or band that has just released their first single and will not be paid for its success. This is about the young songwriter who just got his or her first cut and thought that the royalties from that would get them out of debt. This is about the producer who works tirelessly to innovate and create, just like the innovators and creators at Apple are pioneering in their field . . . but will not get paid for a quarter of a year's worth of plays on his or her songs."[31] As a result of Taylor's letter, Apple reversed its policy on not paying royalties for free trials.[32]

75. Taylor also took issue with Spotify's so-called "ad-supported," free streaming tier. Spotify streams billions of tracks on its ad-supported tier, but pays miniscule royalties

---

[31] To Apple, Love Taylor (June 21, 2015), http://taylorswift.tumblr.com/post/122071902085/to-apple-love-taylor.

[32] Shirley Halperin, *Apple Music Backs Down: Will Pay Labels During Free Trial After Taylor Swift Letter*, The Hollywood Reporter (June 21, 2015), http://www.hollywoodreporter.com/news/apple-music-backs-down-will-804050.

based on a percentage of its advertising revenues of which it is incentivized to earn very little. And that's because Spotify is more concerned with building a user base to bolster its enterprise value (currently sitting at over $8 billion) for its highly-publicized contemplated IPO.[33] In other words, by being forced to supply Spotify with content under the statutory license, songwriters and music publishers are subsidizing gigantic paydays for Spotify's current owners once Spotify's stock is publicly traded on the free market.

76. Taylor Swift was not willing to tolerate Spotify's business model. Luckily for her, she is a recording artist in addition to being a songwriter. As a recording artist whose sound recording rights are not subject to the compulsory mechanical license, she has the ability to pull her works from Spotify, which she did. She said that she pulled her music from Spotify because "there should be an inherent value placed on art," which she didn't see happening on Spotify. She said that while some services require payment for a premium package to access her albums, Spotify does not. In other words, any user can access the same vast catalog of songs on Spotify's free tier as on its or any other Digital Service's paid subscription tier.

77. Aloe Blacc, is a songwriter and musician whose songs include "Wake Me Up" (co-written with Avicii, and which reached Number 1 in over 103 countries), "I Need A Dollar" (which was used as the theme song to the HBO series "How To Make It In America") and "The Man" (which was featured as background music in Beats by Dr. Dre TV commercials). In a recent *Wired* magazine editorial, Aloe eloquently summarized the problems facing songwriters in a marketplace dominated by interactive streaming services:

---

[33] Madeleine Johnson, *Will Spotify Stream Into an IPO in 2017?*, NASDAQ.com (Sept. 23, 2016), http://www.nasdaq.com/article/will-spotify-stream-into-an-ipo-in-2017-cm683941.

> The abhorrently low rates songwriters are paid by streaming services – enabled by outdated federal regulations – are yet another indication our work is being devalued in today's marketplace.
> . . .
> The reality is that people are consuming music in a completely different way today. Purchasing and downloading songs have given way to streaming, and as a result, the revenue streams that songwriters relied upon for years to make a living are now drying up.
>
> But the irony of the situation is that our music is actually being enjoyed by more people in more places and played across more platforms (largely now digital) than ever before. Our work clearly does have value, of course, or else it would not be in such high demand. So why aren't songwriters compensated more fairly in the marketplace?
>
> I, for one, can no longer stand on the sidelines and watch as the vast majority of songwriters are left out in the cold, while streaming company executives build their fortunes in stock options and bonuses on the back of our hard work.
> . . .
> I will do my part to try to convince people that the music they love won't exist without us, and that we, as songwriters, cannot continue to exist like this. And you can do your part to protect the music you love by buying albums and urging streaming services to uphold the value of songwriting. After all, if songwriters cannot afford to make music, who will?[34]

78. In sum, higher rates are needed to provide a fair return for the creative work required to produce new music. *See* 17 U.S.C. § 801(b)(1)(B). In the years since the current rates were established, the Copyright Owners have continued to work hard to create high-quality new music, which is the foundation of the value provided by the streaming services to their users. Music publishers have continued to make a tremendous effort to find, develop, support and promote songwriters. The results of these creative contributions have been consistently innovative, exciting and attractive to music consumers. Yet the Copyright Owners' share of revenue derived from mechanical royalties no longer matches the effort required to earn mechanical royalties.

---

[34] Aloe Blacc, *Streaming Services Need To Pay Songwriters Fairly*, Wired (Nov. 5, 2014), https://www.wired.com/2014/11/aloe-blacc-pay-songwriters/.

79. A rate increase would also better reflect the relative roles of the Copyright Owners, the Digital Services and the record labels in making the creative product available. As I have described, and other witnesses will relate in detail, the effort songwriters and music publishers must make to produce hit songs has not changed. On the other hand, the costs of the record labels have been declining. They no longer incur costs for physical distribution where the Digital Services are the distributors. They also no longer incur packaging costs in these scenarios. And their costs and investments in finding and developing recording artists are hardly more significant than the costs and investments that publishers make in finding and developing songwriters, as detailed in the statements of the music publisher witnesses. In fact, a recent article in Music Business Worldwide reported the results of a study that revealed that, in the UK, record labels spent £178 million on A&R in 2014, while music publishers spent £162 million.[35] Yet, as it has also been publicly reported, the Digital Services generally pay the record labels between 55% and 60% of their revenues, and songwriters and publishers a fraction of that amount.[36] There is no justification for the contributions that the Copyright Owners and their songs make to these services to be valued at such a small fraction of the labels' contributions.

80. The Digital Services, for their part, keep approximately 30% of revenues for themselves. But in the music ecosystem, Digital Services are merely distributors. They are, essentially, delivery services, or in the vernacular of other content providers, "dumb pipes." In the physical world, record distributors are paid significantly less than 30% of sales. Services that deliver other products are also paid far less. For example, food delivery service GrubHub is paid

---

[35] Tim Ingham, *Major Label A&R Spend Has Shot Up In The UK. So Why Are Old Artists Dominating This Week's Chart*, Music Business Worldwide (Nov. 9, 2015), http://www.musicbusinessworldwide.com/major-label-ar-spend-has-shot-up-in-the-uk/.

[36] Tim Ingham, *Spotify Is Out Of Contract With All Three Major Labels – And Wants To Pay Them Less*, Music Business Worldwide (Aug. 22, 2016), http://www.musicbusinessworldwide.com/spotify-contract-three-major-labels-wants-pay-less/.

13-15% of the order price for the delivery.[37] There is no justification for so devaluing the relative contribution that the Copyright Owners and their songs make to these Digital Services.

C. An Increase in the Current Rate Will Still Afford the Digital Services More Than a Fair Income, and Will Not Be Disruptive

1. The Current Rate and Rate Structure Were Negotiated When the Streaming Industry Was Nascent and Without Information About the Business Models of the Digital Services

81. When the current statutory rates and rate structure were negotiated, interactive streaming was in an experimental phase. No one knew who would be operating streaming services (it was thought that it might be the labels) or what their business models might be.

82. To understand how the current statutory rate and rate structure came into being, one needs to take a brief look back at the history of the Section 115 rate proceedings and settlement negotiations.

83. In 1980, the Copyright Royalty Tribunal ("CRT") convened the first proceeding to determine rates for the Section 115 license.[38] The Recording Industry Association of America ("RIAA") represented the interests of record labels and the NMPA represented the interests of music publishers and songwriters in that proceeding, which resulted in the statutory license rate increasing from 2.75¢ to 4¢ per phonorecord with interim adjustments over the following 7-year period.[39]

---

[37] *GrubHub: A Proper Valuation*, Seeking Alpha (Apr. 11, 2016), http://seekingalpha.com/article/3964501-grubhub-proper-valuation; Zachary M. Seward, *GrubHub and Seamless Take a 13.5% Cut of Their Average Delivery Order*, Quartz (Mar. 1, 2014), http://qz.com/182961/grubhub-and-seamless-take-a-13-5-cut-of-their-average-delivery-order/.

[38] *See* Final Rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding ("Phonorecords I Final Rule"), Docket No. 2005-3 CRB DPRA, 74 Fed. Reg. 4510, 4513 (Jan. 28, 2009).

[39] *Id.*

84. In 1987, the CRT was to convene a subsequent proceeding to adjust 115 rates.[40] The NMPA, however, was able to negotiate a settlement with RIAA (still the only entity representing the interests of licensees at that time) avoiding the need for a proceeding. The 1987 CRT settlement raised the rate to 5.25¢ per phonorecord with a schedule of rate increases over the next ten years.[41]

85. In 1993, Congress abolished the CRT and replaced it with a similar tribunal, the Copyright Arbitration Royalty Panel ("CARP"). Copyright Royalty Tribunal Reform Act of 1993, H.R. 2840, 103d Cong. (1993).

86. In 1995, in response to the rapid growth of the use of music in digital formats (i.e., via online, webcast and subscription satellite uses), Congress passed the Digital Performance in Sound Recordings Act (the "DPRA"), Public Law No. 104-39, 109 Stat. 336, which created a digital performance right for sound recordings subject to the separate, newly created compulsory license at Section 114 of the Copyright Act. Significantly as well, the DPRA expanded the Section 115 compulsory license to cover "digital phonorecord deliveries" ("DPDs"), which it defined in relevant part as "each individual delivery of a phonorecord by digital transmission of a sound recording which results in a specifically identifiable reproduction by or for any transmission recipient of a phonorecord of that sound recording . . ." 17 U.S.C. § 115(d).[42]

87. With the expiration of the 1987 CRT settlement, the first Section 115 proceeding under the CARP regime was set to begin in 1997. This would have been the first proceeding to

---

[40] *Id.* at 4514.

[41] *Id.*

[42] Non-interactive streaming transmissions subject to the Section 114 compulsory license were expressly carved out of the Section 115 compulsory license. *See* 17 U.S.C. § 115(d).

determine rates for DPDs (then, predominantly permanent digital downloads). Again, however, the proceeding was obviated by a settlement negotiated between RIAA on behalf of record labels and the NMPA on behalf of music publishers. The 1997 CARP settlement set the rate for physical phonorecords at 7.1¢ per track as of January 1, 1998, with rate increases every two years over the next ten-year period, leading to a rate of 9.1¢ per track as of January 1, 2006. The rates adopted for DPDs for the 10-year period were to be the same as those for physical phonorecords.

88. A few years after the 1997 CARP settlement, the technology to deliver interactive streams and limited downloads became sufficiently developed. At the time, the record labels expressed a desire to deliver phonorecords on either a subscription or ad-supported basis via this emerging technology. In fact, the major record labels formed two joint ventures to effectuate these streaming business models: Pressplay and MusicNet.[43]

89. In October 2001, the NMPA, along with HFA, entered into a license agreement with RIAA covering all reproduction rights for the delivery of on-demand streams and limited downloads on the new subscription services. The 2001 agreement did not specify a royalty rate, but rather provided that a license rate would be set in the future.

90. Subsequently Congress passed the Copyright Royalty and Distribution Reform Act of 2003, Public Law No. 108-419, 118 Stat. 2341, which effectively replaced the CARP regime with the Copyright Royalty Board, which was deputized to determine rates and terms for the Section 115 compulsory license as the CRJs are, of course, doing in these proceedings.

91. In the interim, the market for subscription music streaming services stalled out. Failing to meet the expectations of the record labels, the record companies sold their stakes in

[43] *See* Al Kohn & Bob Kohn, *Kohn on Music Licensing* 757 (4th ed. 2010).

Pressplay and MediaNet.[44] Several technology companies instead began to enter the interactive streaming and limited download market. Around the same time, a coalition of emerging technology companies formed the Digital Media Association ("DiMA"). There remained significant questions, however, as to how these technology companies would monetize subscription music services.

92. In January 2006, the CRB issued a notice for petitions to participate in the *Phonorecords I* proceeding.[45]

93. Following an unsuccessful negotiation period, the CRB accepted written direct statements from the following groups: RIAA; Copyright Owners (a joint group of participants led by the NMPA); and DiMA (joined by its member companies America Online, Inc., Apple Computer, Inc., MusicNet, Inc., RealNetworks, Inc., Napster, LLC, and Yahoo! Inc.[46]). Significantly, none of the streaming services represented in the current Section 115 proceeding were even in existence at the time of *Phonorecords I.*[47] None of the market intelligence, information and data about the functionality of the interactive streaming market or the business models of the Digital Services currently available to the participants in this Proceeding was available to the parties in *Phonorecords I*.

94. The *Phonorecords I* proceedings were contentious and costly. In addition to written direct and rebuttal statements, the record in the case consists of over 8,000 pages of

---

[44] *See id.* at 760.

[45] *See* Phonorecords I Final Rule, 74 Fed. Reg. 4510, 4510 (citing 71 Fed. Reg. 1454).

[46] Napster and Yahoo later withdrew from *Phonorecords I. Id.* at 4510 n.2.

[47] With respect to the streaming services represented in the current proceeding, Spotify launched in the United States in 2011; the Apple Music streaming service launched in 2015; Google Play launched in 2013; Amazon launched its Prime Music streaming service in 2014 and Pandora is presently in the process of entering the on-demand streaming market, having been a solely non-interactive streaming service licensable under Section 114 of the Copyright Act for many years.

transcripts, over 140 admitted exhibits and over 340 pleadings, motions and orders on the docket.[48] After a prolonged discovery period, the CRB heard live testimony from January 28, 2008 to February 26, 2008 and rebuttal testimony from May 6 to May 21, 2008.[49]

95. On May 15, 2008, towards the end of the hearing, the parties, acting through RIAA, NMPA and DiMA, informed the CRB that they had reached a partial settlement of the proceeding by agreeing to rates and terms for limited downloads and interactive streaming.[50] All parties were equally motivated by uncertainty to reach a settlement. The interactive streaming market was untested and the outcome of a CRB proceeding to determine rates and terms for completely new service offerings was no more certain. The parties' settlement led to the creation of the existing "Subpart B" regulations. *See* 37 CFR §§ 385.10 to 385.17.

96. The parties left the determination of rates and terms for physical configurations, permanent downloads and ringtones to the discretion of the CRB. By some estimates the parties spent over $17 million in litigation. The end result: the rate for physical reproductions and downloads was set at 9.1¢, which was the rate in effect at the start of the proceedings under the schedule set by the CARP in 1997.[51] The CRB also enacted a rate of 24¢ per ringtone and provided for a late fee of 1.5% a month for any payments received after the statutory deadline.[52] These provisions are all captured in the "Subpart A" portion of the regulations corresponding to Section 115.[53] 37 CFR §§ 385.1 to 385.4.

---

[48] *Id.* at 4511.

[49] *Id.* at 4510-11.

[50] *Id.* at 4511.

[51] *Id.* at 4510, 4514.

[52] *Id.* at 4510.

[53] As noted above, because the Subpart A regulations were enacted by the CRB, and the Subpart B regulations were the product of settlement, there is a drafting error in the placement of the late

97. The final determination in *Phonorecords I* was published in the Federal Register in January 2009.[54] By and large it is still how rates for physical product, downloads and interactive streaming services operating under the Section 115 compulsory license are determined today.

98. The CRB next called for petitions to participate in proceedings to set the compulsory license in January 2011.[55] The tremendous expense of the *Phonorecords I* proceedings and the result – which effectively maintained the status quo in terms of physical and download rates – was not far from the minds of the participants entering *Phonorecords II*. Thus, the parties had little appetite for litigation in *Phonorecords II.*

99. The parties also, again, had little real data to rely upon. At that time, the interactive streaming market was really only beginning to take shape. Spotify would not launch in the United States until later that year, followed by Google Play Music. The other participants representing the interests of Digital Services in the current proceedings would all launch their interactive streaming services much later (one has still not yet launched).

100. For these reasons, the parties to *Phonorecords II* came prepared to quickly negotiate a settlement and were able to do so in the proceedings without need to file a written direct statement, take any discovery or engage in any hearings.

101. On April 10, 2012, the parties to *Phonorecords II* filed a motion to adopt a settlement, which essentially encompassed a roll-forward of the existing rates and terms in

---

fee provisions in Subpart A. The Copyright Owners have always understood the late free provision at 35 C.F.R. § 385.4 to apply to all late payments under the Section 115 statutory license.

[54] Phonorecords I Final Rule, 74 Fed. Reg. at 4510-36.

[55] Final Rule, Adjustment of Determination of Compulsory License Rates for Mechanical and Digital Phonorecords ("Phonorecords II Final Rule"), Docket No. 2011-3 CRB Phonorecords II, 78 Fed. Reg. 67938, 67939 (Nov. 13, 2013).

Subparts A and B.[56] In addition, the parties provided for the addition of a new set of categories which they described as follows:

> an agreement has been reached on rates and terms for certain new categories of services, including mixed service bundles, paid locker services, purchased content locker services, limited offerings and music bundles that either have been developed since the last proceeding or are likely to be launched over the term covered by this one.[57]

These new categories were embodied in a new Subpart C of the regulations. 37 CFR §§ 385.20 to 385.26.

102. A final order settling the *Phonorecords II* proceedings with the roll forward of the Subpart A & B rates and terms with the addition of the new Subpart C rates and terms was published in the Federal Register in 2013.[58] These are the rates and terms that currently comprise the Section 115 statutory license. Though the Subpart C regulations were added later in time, it is the Subpart B regulations, where there has been explosive growth over the last five years, that are of the greatest interest to the Copyright Owners in these Proceedings.

2. The Copyright Owners' Proposed Rates and Terms Better Reflect the Realities of the Current Market Than the Existing Rates and Terms

103. At the time and in the context of the *Phonorecords I* and *II* settlements, when the streaming services were experimental ventures, the then-newly implemented rates and rate structure might have made sense. But the streaming services are no longer experimental ventures. They are mature businesses operated by huge technology companies. And there can be no doubt that these companies can afford to pay more to the copyright owners who provide

---

[56] *Id.*

[57] Motion to Adopt Settlement dated Apr. 10, 2012, *Matter of Adjustment or Determination of Compulsory License Rates for Making and Distributing Phonorecords*, Docket No. 2011-3 CRB Phonorecords II.

[58] Phonorecords II Final Rule, 78 Fed. Reg. 67938.

them with all of the music. In fact, I understand from publicly available data that many of these companies have already paid effective per-play rates that are at the same or at even a higher level than the per-play rate proposed by the Copyright Owners, and they are still highly profitable.[59] The Copyright Owners' proposal would, therefore, still afford the Digital Services a more than fair income. *See* 17 U.S.C. § 801(b)(1)(B).

104. In fact, while these companies often try to paint music publishers as the power-wielding giants, the reality is that the entire publishing industry in the United States is worth around $2.5 billion annually.[60] While that number in the abstract may seem large, size is, of course, relative. Spotify **alone** was recently valued at over $8 billion.[61] Pandora's market cap sits at about $3 billion.[62] Apple, of course, is not only one of the biggest tech companies in the world, it is (as of May 2016, as reported by Forbes) the 8th largest company in the world and the 4th largest in the United States, with revenues in the past year of $233 billion, profits of $53 billion, assets of $239 billion, and a market cap of $586 billion.[63] Alphabet, Inc., a newly founded holding group for Google, has a market cap of nearly $560 billion and had revenues in

[59] Analysis of Music Streaming Services for 2014, Audiam (2015), *available at* https://docs.google.com/file/d/0BwsIBPX1QCEWTTdqaDNPQnp3UDQ/.

[60] CO Ex. 1.1.

[61] Madeleine Johnson, *Will Spotify Stream Into an IPO in 2017?*, NASDAQ.com (Sept. 23, 2016), http://www.nasdaq.com/article/will-spotify-stream-into-an-ipo-in-2017-cm683941.

[62] Pandora, Bloomberg Markets, http://www.bloomberg.com/quote/P:US (last visited Oct. 18, 2016).

[63] Samantha Sharf, *The World's Largest Tech Companies 2016: Apple Bests Samsung, Microsoft And Alphabet*, Forbes (May 26, 2016), http://www.forbes.com/sites/samanthasharf/2016/05/26/the-worlds-largest-tech-companies-2016-apple-bests-samsung-microsoft-and-alphabet.

the past year of around $75 billion, with profits of over $16 billion.[64] Amazon's revenues topped $107 billion, with over $65 billion in assets, $596 million in profits, and a market cap of $389 billion.[65]

105. Perhaps the best evidence that the interactive streaming industry is a lucrative one – for the streamers – is that some of the largest companies in the world have been eager to either enter it, or invest in it. In May 2014, Apple paid $3 billion to acquire Beats, which was operating an unsuccessful interactive streaming service, to facilitate Apple's entry to the market.[66] In December 2015, Pandora paid $75 million in cash to buy the streaming technology of the bankrupt interactive streaming service Rdio, to help it diversify into the interactive space.[67] In March 2016, Spotify raised $1 billion in convertible debt from investors.[68] Last month, iHeartMedia Inc. (formerly Clear Channel), the biggest U.S. radio broadcaster and the creator of iHeartRadio, announced that it too will be launching a subscription interactive streaming service

---

[64] Alphabet Inc., Bloomberg Markets, http://www.bloomberg.com/quote/GOOG:US (last visited Oct. 18, 2016); Alphabet Inc., Annual Report at 21 (Form 10-K for 2015), *available at* https://www.sec.gov/Archives/edgar/data/1288776/000165204416000012/goog10-k2015.htm.

[65] Amazon.com, Inc., Annual Report at 17, 39 (Form 10-K for 2015), *available at* https://www.sec.gov/Archives/edgar/data/1018724/000101872416000172/amzn-20151231x10k.htm; Amazon.com Inc., Bloomberg Markets, http://www.bloomberg.com/quote/AMZN:US (last visited Oct. 18, 2016).

[66] Apple to Acquire Beats Music & Beats Electronics, Apple Press Info (May 28, 2014), https://www.apple.com/pr/library/2014/05/28Apple-to-Acquire-Beats-Music-Beats-Electronics.html.

[67] Lillian Rizzo, *Pandora Wins Approval to Buy Rdio for $75 Million*, The Wall Street Journal (Dec. 23, 2015), http://www.wsj.com/articles/pandora-wins-approval-to-buy-rdio-for-75-million-1450886123.

[68] Douglas Macmillan et al., *Spotify Raises $1 Billion in Debt Financing*, The Wall Street Journal (Mar. 29, 2016), http://www.wsj.com/articles/spotify-raises-1-billion-in-debt-financing-1459284467.

this January.[69] And there have been numerous rumors that Spotify may soon purchase SoundCloud, and that Facebook may purchase Spotify.[70]

106. These technology companies are generating a lot of money for themselves from the songs provided by the publishers and their songwriters. Their profitability or their massive enterprise value growth (which will eventually translate into profitability at a time of their own choosing) is demonstrated not only by their public financial statements, but also by the fact that new entrants are eager to get into the game. For these reasons, it seems equally clear that the rates proposed by the Copyright Owners would not significantly disrupt the interactive streaming industry. *See* 17 U.S.C. § 801(b)(1)(D). Mechanical license fees are a relatively minor fraction of the streaming companies' costs, and the rates we propose can no doubt be borne by the services, particularly since those works are the essential inventory input for their services. If anything will disrupt the industry, as indicated in the witness statements of the finance executives employed by the music publishers, it will be the price slashing and deep discounting that each of these services has begun to undertake in order to seize market share from each other.

D. If the Current Rates Are Not Increased, There Will Be Fewer Songs Created

107. Below market royalties impact more than just the pocketbooks of the songwriters and publishers. They will also lead inevitably to fewer songs being created because fewer new writers will obtain publishing deals. As the witness statements of the Copyright Owners'

---

[69] *iHeartMedia Revolutionizes Live Radio and Introduces on Demand with New Services 'iHeartRadio Plus' and 'iHeartRadio All Access,'* Business Wire (Sept. 23, 2016), http://www.businesswire.com/news/home/20160923005207/en/iHeartMedia-Revolutionizes-Live-Radio-Introduces-Demand-Services.

[70] Matthew Garrahan, *Spotify In Advanced Talks To Buy SoundCloud*, Financial Times (Sept. 28, 2016), https://www.ft.com/content/f301392f-069c-32f0-8087-18f3377e0e10; Jill Bederoff, *One Of Spotify's Owners Says It's NOT Unlikely That Facebook Buys The Company*, Business Insider Nordic (Sept. 16, 2016), http://nordic.businessinsider.com/gp-bullhound-facebook-might-buy-spotify-before-the-ipo-2016-9/.

songwriter and publisher witnesses confirm, below market royalty rates lead to music publishers having less capital to invest in new songwriters, forcing them to reduce the number of songwriters they can sign, and songwriters, in turn, will have less incentive and less financial ability to invest the time necessary to create great music. If a creator does not believe she will recoup her financial and time resource investment, she will not be incentivized to create new works.

108. In sum, the current statutory rate and rate structure results in the devaluing of songs by the Digital Services. If this devaluation continues, there will be fewer professional songwriters writing songs and even those that can continue to write will find less and less economic incentive to do so. Publishers will not be able to continue to furnish the same level of support to songwriters and will end up signing fewer songwriters, depriving others of the support they need to perhaps create the "evergreen" songs of the future. Better rates, more attuned to the realities of the now mature streaming marketplace, are needed to support the music industry eco-system that has worked so well for over a century, where music publishers support the songwriters of the future through the income generated by their existing catalogues of songs. If that support erodes because the income being generated diminishes, at least some of the unknown songwriters of today will never become the Yip Harburg or Taylor Swift or Leonard Bernstein or Nobel Laureate Bob Dylan of tomorrow because they will be unable to support themselves by writing and will have to turn to other work to pay their bills. The public as well as the Digital Services will be the poorer for that loss. More realistic rates are needed to allow music publishers to continue to provide a strong support system for their current songwriters and expand their rosters to develop the careers of more new songwriters. Adopting the Copyright Owners' proposed rates and terms will, in my view, go a long way towards assuring, at least in

the next years, that there is no significant diminution in the number or quality of works that are created, furthering the statutory objective set forth in Section 801(b)(1)(A).

V. Conclusion

109. The current rates are neither reasonable, fair nor negotiated with the relevant information concerning the business models of the Digital Services. They are insufficient to provide American songwriters and music publishers with adequate compensation. An increased mechanical royalty rate consistent with the Copyright Owners' proposal will, by contrast, fairly compensate the Copyright Owners and help ensure the continued creation of new songs: the heart and soul of American musical culture and the American music industry.

I declare under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information and belief.

Dated: October 28, 2016

David Israelite

Before the
COPYRIGHT ROYALTY BOARD
LIBRARY OF CONGRESS
Washington, D.C.

In the Matter of: DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	Docket No. 16–CRB–0003–PR (2018–2022)

REBUTTAL WITNESS STATEMENT OF DAVID M. ISRAELITE

PUBLIC VERSION

PUBLIC VERSION

Before the
COPYRIGHT ROYALTY BOARD
LIBRARY OF CONGRESS
Washington, D.C.

In the Matter of: DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	Docket No. 16–CRB–0003–PR (2018–2022)

REBUTTAL STATEMENT OF DAVID M. ISRAELITE

1. My name is David M. Israelite. I am President and Chief Executive Officer of the National Music Publishers' Association ("NMPA").

2. I submit this rebuttal statement in support of the written rebuttal case of the NMPA and the Nashville Songwriters Association International (collectively, "Copyright Owners") in the above-captioned proceeding to set statutory mechanical rates and terms for the period running from 2018-2022 (the "Proceeding"). I previously submitted a written statement in support of the Copyright Owners' written direct statement and their rate proposal in the Proceeding (my "Direct Statement" or "Israelite WDS").

3. I make this statement to refute various representations made by witnesses for Google, Pandora, Amazon and Spotify (such companies, together with Apple, the "Digital Services") regarding, *inter alia*, the 2008 *Phonorecords I* settlement and the 2012 *Phonorecords II* settlement; to explain why those settlements and the 2016 settlement of the Subpart A rates are not appropriate "benchmarks" in this Proceeding; to discuss the nature and purpose of several aspects of the Subpart B and Subpart C rates; and to refute certain of the Digital Services' other statements, including regarding the purported "leverage" or benefits that the compulsory license

provides to Copyright Owners, and the purported "fragmentation" of the performing rights marketplace.

I. The *Phonorecords I* Settlement

4. As I testified in my Direct Statement (at ¶¶ 81, 92-97), the current statutory rates and rate structure were largely negotiated ten years ago as a settlement of the *Phonorecords I* rate court proceeding. At the time, the interactive streaming business was in its infancy and the settlement reflected that the business models for delivering interactive streams and limited downloads were experimental. No one – certainly not the Copyright Owners – was certain whether and how they might develop.[1] None of the now-mature market intelligence, information or data about the functionality of the interactive streaming market or the business models of the Digital Services currently available to the participants in this Proceeding was or could have been available to the parties in *Phonorecords I*.[2]

5. The settlement was negotiated and made by and among those parties that were participants and had submitted written direct statements in *Phonorecords I*: the Recording Industry Association of America ("RIAA"), representing the record labels; Copyright Owners (a joint group of participants led by the NMPA); and the Digital Media Association ("DiMA") (joined by its member companies America Online, Inc., Apple Computer, Inc., MusicNet, Inc., and RealNetworks, Inc.).[3] The *Phonorecords I* settlement was, to the best of my recollection, negotiated primarily by myself, NMPA's then-in-house counsel Jacqueline Charlesworth, and our then-outside counsel Paul, Weiss, Rifkind, Wharton & Garrison LLP, on behalf of the

[1] Israelite WDS ¶¶ 81, 91.

[2] *Id.* ¶ 93.

[3] *See* Israelite WDS ¶¶ 92-93; Final Rule, Mechanical and Digital Phonorecord Delivery Rate Determination Proceeding ("Phonorecords I Final Rule"), Docket No. 2005-3 CRB DPRA, 74 Fed. Reg. 4510, 4510 (Jan 28, 2009) (citing 71 Fed. Reg. 1454). Napster and Yahoo had been participants but had by the time of the settlement withdrawn from *Phonorecords I*. Phonorecords I Final Rule, 74 Fed. Reg. at 4510 n.2.

Copyright Owners; Steven Marks, General Counsel of RIAA and RIAA's outside counsel, Steven Englund from Arnold & Porter, on behalf of RIAA; and Jonathan Potter and Lee Knife of DiMA, Cindy Charles of MediaNet, Michael King of RealNetworks, and Aileen Atkins of Napster, on behalf of the Digital Services.

6. As I noted in my Direct Statement (at ¶ 81), at the time of the *Phonorecords I* settlement, no one knew who would be operating streaming services or what their business models might be. In fact, it was believed at the time that the record labels might be the entities who would operate these services. In other words, NMPA, in negotiating the settlement, was dealing in large part with the record labels (through the RIAA) – parties with whom the music publishing community had a long and continuing relationship and who knew and understood the details and nuances of the music business – and other companies focused on the distribution of music (and not other unrelated businesses such as digital devices, data collection, and physical, non-music product delivery). These parties trusted each other not to try to "game" the rates.

7. The *Phonorecords I* settlement was reached in May of 2008, after the participants had submitted their direct written testimony and while rebuttal testimony was being taken.[4] To the best of my recollection, the rate and rate structure that was ultimately settled upon was discussed for the first time in early 2008, *i.e.*, it was not the product of pre-litigation discussions, and it differed in significant ways from the rate proposals of any of the *Phonorecords I* participants.

8. As I noted in my WDS, none of the interactive streaming services represented in the current Section 115 proceeding were even in existence at the time of *Phonorecords I*, and none participated in the *Phonorecords I* settlement. Spotify launched in the United States in

[4] Phonorecords I Final Rule, 74 Fed. Reg. at 4511.

2011; Google Play launched in 2013; Amazon launched its Prime Music streaming service in 2014; Apple launched its Apple Music streaming service in 2015; and Pandora is presently in the process of entering the on-demand streaming market. While Apple was present during the *Phonorecords I* proceeding, its presence was related to its position as the leading distributor at the time of permanent digital downloads (a product governed by Subpart A of the Section 115 regulations) via the iTunes download store; not because of any interest that it had at the time in interactive streaming.[5]

9. Certain of the participants in this Proceeding have, in their written direct statements, made various incorrect "factual" assertions regarding the *Phonorecords I* settlement and the intent of the parties thereto, even though those participants – and some or all of the individuals making the statements – were not present during the *Phonorecords I* settlement negotiations. I was. For example, Google's witness, Zahavah Levine, testifies at length about the *Phonorecords I* settlement.[6] Specifically, Ms. Levine states:

> Under the prevailing rates in 2008 as I understood them, the settlement meant that a ten-dollar-per-month subscription service effectively paid a 10.5 percent of revenue all-in fee for music publishing rights (including public performance rights) associated with a subscription on-demand service.[7]

Similarly, Ms. Levine, in describing the 2012 *Phonorecords II* settlement (discussed below), characterizes the *Phonorecords I* settlement as "the status quo agreement" determining that "interactive streaming services would pay 10.5 percent of revenue on an all-in basis for music

[5] *See* **CO EX. R-1**, Written Direct Statement of Eddie Cue in *Phonorecords I*, *available at* http://www.loc.gov/crb/proceedings/2006-3/dima-testimony-cue-public-final.pdf.

[6] Levine WDS ¶¶ 33-36, 40-41.

[7] *Id.* ¶ 35.

publishing rights (including whatever mechanical and/or performance rights are implicated by the service's activities)."[8]

10. Google's expert witness, Dr. Gregory Leonard, relying on and citing Ms. Levine's testimony, then states that "historically, the 10.5% of service revenue 'starting point' for the Section 385, Subpart B royalty calculation has been viewed by music service providers (and music publishers) as a rate that covers the costs of all publishing rights associated with Subpart B activities."[9]

11. Those witnesses' characterizations of the *Phonorecords I* settlement and the rate and structure agreed to therein (which forms the basis of Subpart B) are not correct. When negotiating the *Phonorecords I* settlement, the Copyright Owners did not consider the 10.5 percent rate as an "all-in fee" that "covers the costs" of both mechanical and performance rights. The only thing negotiated was the mechanical rate, as clearly evidenced by the terms of Subpart B. The *Phonorecords I* settlement, codified at Subpart B, sets only a mechanical rate – which is the only rate that can be determined in a Section 115 rate proceeding and the only rate that can be the subject of a settlement forming the basis for statutory rates and terms.

12. While the settlement provided that the ultimate mechanical rate to be paid would be the result of a complex greater-of calculation which provided in certain steps for the deduction of any performance royalties paid by digital services, it did not and could not set an "all-in" rate including a public performance rate under Section 115. Public performance rates

---

[8] *Id.* ¶ 40.

[9] Leonard WDS ¶ 51. Google has redacted portions of Ms. Levine's WDS where she appears to be discussing the *Phonorecords I* settlement. *See, e.g.*, Levine WDS (Public Version) ¶¶ 35, 41, 53. It is plainly improper for Google to freely discuss what it claims (without any factual basis for the claim) was discussed during settlement negotiations to which it was not a party while designating them as "confidential and restricted" to conceal them from me and others who were actually involved in those settlement negotiations in an attempt to prevent me from challenging their statements. I am therefore required to provide the true facts of the settlement discussions without the ability to directly contrast them with Google's less-than-accurate presentation. I object to Google's attempts to shield me from this testimony and reserve the right to contest any of those statements at trial.

are subject to an entirely separate rate-setting process, and public performance rights are not available for compulsory license under Section 115. The mechanical rate, after deducting amounts paid for performance rights, might be the mathematical difference between 10.5 percent of revenue and the amounts paid for performance, but the rate structure recognizes that it might not be if, for example, the mechanical-only payable royalty pool (the remainder after deduction of the performance fees) is less than the mechanical-only per-subscriber minimum.[10]

13. In addition, Ms. Levine's statements are not based on personal knowledge. At the time the settlement was reached, Ms. Levine was an employee of YouTube, which had recently been purchased by Google, which was not at that time offering an interactive streaming service.[11] Neither Google, nor YouTube – let alone Ms. Levine – was present during the negotiations of the *Phonorecords I* settlement. Her "knowledge" is at best based on speculation and conjecture rather than actual experience.

14. I understand that Ms. Levine, prior to her employment at YouTube, was employed at Listen.com, which was subsequently purchased by RealNetworks, which was a participant in *Phonorecords I* via trade organization, DiMA. But Ms. Levine admittedly left RealNetworks for YouTube in 2006 – two years prior to the *Phonorecords I* settlement (*see* Levine WDS ¶ 8) – and even accepting her statement, she was not present during the negotiations of the *Phonorecords I* settlement and lacks the "personal knowledge" that she claims to have (*see id. ¶* 25). Instead, to the extent that Ms. Levine has any understanding of the *Phonorecords* I settlement that resulted in the Subpart B rate and rate structure, it can only have come from her "continu[ing] to follow Section 115 developments with interest" after she had left

[10] Pandora's witness, Adam Parness, also characterizes the Subpart B and C rates as an "'all-in' rate structure for both mechanical and performing rights." Parness WDS ¶ 14. I disagree with Mr. Parness' characterization for the same reason.

[11] *See* Levine WDS ¶ 8.

RealNetworks in 2006.[12] In other words, her professed understanding is not personal but purely derivative. Again, my knowledge is direct and personal.

15. Pandora's witness, Adam Parness, also testifies about the 2008 *Phonorecords I* settlement. Mr. Parness states that he was employed by RealNetworks during the period that agreement was negotiated.[13] I do not recall Mr. Parness being part of the team that negotiated the *Phonorecords I* settlement on behalf of the RealNetworks or any of the digital services. The representative from RealNetworks that I recall negotiating with was RealNetworks' Managing Attorney, Michael King.

16. Nor did Mr. Parness testify in the *Phonorecords I* proceeding. The individuals who submitted testimony in that proceeding on behalf of RealNetworks were Timothy Quirk, RealNetworks' Vice President of Music Content and Programming, and Dan Sheeran, RealNetworks' Senior Vice President of Business Development.[14]

17. Mr. Quirk testified in the *Phonorecords I* proceeding that (at the time of his testimony in 2007), "the subscription service business model is still evolving but faces several unique and different hurdles compared to the sale of permanent downloads," and he argued that, for that reason and at that time, "the rate for conditional downloads should be set at a rate lower than the rate for permanent downloads, so as to encourage development of this business."[15]

18. Mr. Sheeran, testifying in *Phonorecords I* in support of DiMA's amended rate proposal for conditional or "limited" downloads made via subscription streaming services – which products are, from a consumer standpoint, essentially equivalent to, and treated exactly the

---

[12] *See* Levine WDS ¶ 30.

[13] Parness WDS ¶ 6.

[14] *See* Phonorecords I Final Rule, 74 Fed. Reg. at 4511.

[15] **CO EX. R-167**, Written Direct Statement of Timothy Quirk WDS ¶ 61, *available at* http://www.loc.gov/crb/proceedings/2006-3/dma-quirk-amended.pdf.

same in both the current Subpart B and C regulations and the Participants' rate proposals in this Proceeding as, interactive streams – argued in favor of a proposed minima of $.00129 per playback of a limited download that is made to a non-subscriber, given that minima "provide some protection for copyright owners," and that "business models are evolving and that both subscription and 'non'-subscription offerings may develop more over the next five years."[16]

19. Thus, the testimony of RealNetworks' witnesses given during the *Phonorecords I* proceeding shortly before the settlement of that proceeding supports my testimony that the parties at the time of the settlement recognized that the streaming industry was in its infancy and that the rates agreed upon were experimental. Equally important, it also advanced a rate structure that is consistent with the proposed mechanical per play rate structure proposed by the Copyright Owners in this Proceeding.

20. While I do not recall Mr. Parness' participation in the negotiations and disagree with much of what he has said, I do agree with Mr. Parness that the percentage of revenue structure was preferred by the digital services, and that the revenue prong was "subject to certain minima and floor payments," which he admits served several purposes.[17] I also agree with Mr. Parness that the Copyright Owners expressed a "concern" during the *Phonorecords I* settlement negotiations "that structuring the rate solely as a percentage of service revenue could lead to a sharp decline in royalty payments in the event of lower retail pricing by services,"[18] (a reality that has come to pass).[19] I further agree with Mr. Parness that the minima and floor payments

[16] **CO EX. R-168**, Written Rebuttal Testimony of Dan Sheeran Rebuttal Statement ¶ 28, *available at* http://www.loc.gov/crb/proceedings/2006-3/DIMA/dan-sheeran.pdf.

[17] Parness WDS ¶ 7.

[18] *Id.* ¶ 8.

[19] *See* **CO EX. R-169**, *Average Streaming Subscription Price Fell to $6.49 a Month in 2015*, Music Business Worldwide (Feb. 6, 2017), http://www.musicbusinessworldwide.com/average-streaming-subscription-price-fell-6-49-2015/.

were negotiated in part to "ensure a base level of compensation to Copyright Owners . . . in the event of price declines or the emergence of business models that monetized streaming activity less effectively," as well as to ensure that the Copyright Owners in all cases received a minimum mechanical royalty payment.[20] In fact, it is hard to imagine what else these payments, which the regulations enacted in connection with the *Phonorecords I* settlement itself describe as a "minimum or subscriber-based royalty floor," could have been meant to achieve.[21]

21. I disagree with Mr. Parness, however, that the digital services believed that the minima and/or floor payments were "unlikely to be triggered."[22] Of course the minima could bind with respect to a subscription service if prices were reduced, as Mr. Parness appears to concede by qualifying his statement to "under prevailing market conditions,"[23] which I presume refers to the sale of a subscription at a $9.99 price point. And even at a $9.99 price point, the $.50 per subscriber mechanical-only floor could come into play depending on what the service were to pay for performing rights, which rates are established by direct negotiation between the services and the performing rights societies and, in the case of ASCAP and BMI, failing agreement, by rate courts in the Southern District of New York. In any event, this issue was discussed among the parties to the negotiation, and it was never expressed to the Copyright Owners by the digital services that they believed the minima or floor were "unlikely to be triggered" or that they constituted "a negotiating concession without economic impact."[24]

22. The NMPA negotiated for those minima and floor payments precisely because we had no insight into the various ways in which the interactive streaming services might structure

[20] *See* Parness WDS ¶¶ 8-9.

[21] 37 C.F.R. § 385.13(d).

[22] Parness WDS ¶¶ 8-9.

[23] *Id.* ¶ 8.

[24] *Id.* ¶ 9.

their businesses and to ensure that the music publishing and songwriting community (a) would be protected in the event of price cuts or business models that did not effectively monetize the value of the content (which would in either case reduce the revenues on which the percentage or revenue tiers were based), and (b) would, in all events, receive a so-called "minimum" mechanical royalty.

23. In fact, also contrary to Mr. Parness's expressed view, both sides were aware of – and in fact discussed – the possibility that the minima or floor payment might bind in a particular accounting period or periods and, in such scenarios, the total amount paid to the publishers and songwriters for use of their musical works during such periods might be greater than 10.5 percent of the service's revenues during such periods.[25] That was not only contemplated (and part of the bargain), but also appears to be part of the status quo today. In fact, I understand from conversations with NMPA board member publishers that some services that have taken statutory licenses have during certain accounting periods paid under the $.50 per subscriber/per month mechanical-only minimum prong and that, as a result, such services have paid greater than 10.5 percent of their service revenue on an effective basis during those periods even at a $9.99 per month subscription price point.

24. As noted above, Apple ***was*** present during the *Phonorecords I* proceeding (to protect its interests in its permanent digital download business). Apple's witness David Dorn notes: "in 2008 the interactive streaming services and copyright owners struck a deal whereby interactive streaming services paid copyright owners a percentage of their revenue, rather than a fixed per-play amount. The interactive streaming services thus avoided the burden of a fixed cost at a time ***when the market was still developing***, while copyright owners gained access to

[25] In fact, I cannot think of a scenario in which the $.50 per subscriber minima would bind in a particular accounting period and the total amount paid to publishers and songwriters for use of their musical works during such period would not be greater than 10.5 percent.

new music platforms that could compete with pirated music and online music sources that hosted third party content."[26]

25. Similarly, Apple's expert, Jui Ramaprasad accurately notes:

> The current royalty structure was adopted in 2008 as part of a settlement. ***At the time, the streaming market was still in its infancy***. Since then, the industry has shifted as it has grown. The sales of digital downloads are decreasing and interactive streaming is becoming an increasingly prevalent mode of music consumption. The interactive streaming industry has demonstrated its viability and it is no longer a nascent industry with uncertain future.[27]

26. The statements of these digital service witnesses support my testimony that the *Phonorecords I* settlement that resulted in the current Subpart B rates and rate structure was made at a time when the market was embryonic, and that those rates and structure were intended to be experimental and used during the period in which the market was developing. We intended and expected to see how the industry evolved and developed during the ensuing five years (and, as it happened, the development took far longer than we had anticipated and the business had yet to mature by the time of *Phonorecords II*).

II. The *Phonorecords II* Settlement

27. As I previously testified, the *Phonorecords I* proceedings were contentious and costly. So when the CRB next called for petitions to participate in proceedings to set rates and terms for the compulsory license in January 2011, the tremendous expense of the *Phonorecords I* proceedings and the result – which effectively maintained the status quo in terms of physical and download rates – was not far from the minds of the participants entering *Phonorecords II*. Thus, the parties had little appetite for litigation in *Phonorecords II*.[28]

---

[26] Dorn WDS ¶ 30 (emphasis supplied).

[27] Ramaprasad WDS ¶ 5 (emphasis supplied).

[28] Israelite WDS ¶¶ 94-98.

28. As I further testified, the interactive streaming industry had not materially developed in the five years since the settlement of *Phonorecords I* and was only beginning to take shape at the time of *Phonorecords II.* Indeed, even Spotify, which was the first of the Participants in this Proceeding to enter the U.S. interactive streaming market, did not do so until after *Phonorecords II* commenced and was not a participant in that proceeding.[29] None of the other Participants in this Proceeding had launched interactive streaming services by the time of the *Phonorecords II* settlement.[30]

29. The participants again had little real data to rely upon. The other participants representing the interests of Digital Services in the current proceedings would all launch their interactive streaming services much later (one has still not yet launched). For these reasons, the parties to *Phonorecords II* were not in a position nor did they have any appetite to expend financial resources to fight over changes in rates that remained experimental. Indeed, the parties were able to settle without need to file a written direct statement, take any discovery or engage in any hearings.[31]

30. The Digital Services' witnesses do not dispute these facts. In fact, Ms. Levine (who by the time of *Phonorecords II* was at Google, in its Android division[32]), admits that "issues other than rate dominated [the *Phonorecords II*] settlement negotiations."[33] Rather, the parties "negotiated over locker services, 'limited' offerings and various bundled offerings, as well as ancillary issues related to accounting and the length of royalty-free previews and cloud

[29] *See* **CO EX. R-170**, *In the Matter of Music Licensing Study*, U.S. Copyright Office, Docket No. 2014-03, Comments of Spotify, at 6 ("Spotify has not participated in any previous ratesetting process pursuant to Section 115 and therefore takes no position on the process at this time . . .").

[30] Israelite WDS ¶ 93 n. 47.

[31] *Id.* ¶¶ 99-100.

[32] Levine WDS ¶ 9.

[33] *Id.* ¶ 38.

storage of purchased music."[34] The addition of these configurations to the Section 115 regulations (in Subpart C, 37 C.F.R. § 385.20 *et seq.*) was at the urging of the digital services, who expressed a need to have separate rates for these specific business models. I have never believed it prudent to include specific business models in the statute or its implementing regulations, particularly in the digital marketplace where business models are constantly changing. For example, in negotiating the *Phonorecords II* settlement in 2011-12, the digital services were particularly interested in discussing and including in the regulation separate rates for locker services. Now that interactive streaming services have become the prevalent model, locker services have become largely irrelevant.

31. Finally, I understand that some of the services, including Google and Amazon, have stated in part that the current rates and terms should not change because they have somehow relied on the rates or rate structure contained in the *Phonorecords I* and *II* settlements.[35] This appears to be nothing more than an attempt to manufacture some sort of reliance argument for keeping the headline percent of revenue rate unchanged (even as the interactive services try to reduce both the revenue they have already managed to minimize, and eliminate the minima and floors that were part of the settlement they profess to want to retain).

32. To be clear, neither Google nor Amazon (nor any other digital service) could have had any expectation that the rates contained in the *Phonorecords II* settlement would continue beyond the term of that settlement, which was only for the five-year period from 2012-2017. An experimental rate structure was never intended to be immutable, especially when the interactive services have proceeded to structure their businesses afterwards to intentionally divert revenue

[34] *Id.*

[35] *See, e.g.*, Google Introductory Memo. at 1; Amazon Digital Services LLC Introductory Memo. at 3 (referencing the testimony of Rishi Mirchandani).

from "service revenue." Rates are established on a *de novo* basis every five years.[36] In fact, rates used to be established every ten years but the period was reduced precisely because of the concern that the digital music industry is a rapidly-changing market and so the rates need to be re-assessed on a more frequent basis.[37] Google, Amazon and the other digital services were and are fully aware of these facts.

III. The Subpart B and C Settlements Are Inappropriate "Benchmarks"

33. The Digital Services' reliance on the existing statutory mechanical rates contained in Subparts B and C as "benchmarks" in this Proceeding is, in my view, problematic for several reasons in addition to those discussed above.

34. First, those rates were the product of settlements that took into account the substantial costs that would be incurred were the rates to be litigated in comparison to the revenues that were being generated at the time by the few interactive streaming services that were already in the market (which at the time were an insignificant percentage of total mechanical royalties earned by publishers and songwriters). The market was nascent in 2008 and remained so in 2012.

35. I understand that Pandora's expert, Dr. Katz, is arguing that the *Phonorecords I* and *Phonorecords II* settlements are appropriate benchmarks because "it is reasonable to assume" that the parties took into account the 801(b) factors in reaching those settlements.[38] Dr. Katz, like Dr. Leonard, had nothing to do with the *Phonorecords I* and *Phonorecords II* settlements. I was directly involved and I can state with certainty that those factors were never

[36] 17 U.S.C. §§ 115(c)(3)(C) & (D).

[37] H.R. Rep. No. 108-408, at 40 (2004) ("Congress chose this approach because it recognized the rapid pace at which digital technology was developing and the potential need to revisit the issue more frequently than once every 10 years as provided for the physical phonorecords.").

[38] Katz WDS ¶ 66.

discussed during the negotiations, and the CRB, as I understand it, did not perform any analysis of those settlements under 801(b) when approving them. In fact, the CRB expressly noted in *Phonorecords I* that because "Chapter 8 of the Copyright Act encourages settlements among the parties," it had "no choice but to adopt [the settlement] as the basis for the necessary statutory rates and terms applicable to the corresponding licensed activities."[39] Moreover, the CRB observed that in doing so, "the provisions of the settlement [did] not constitute a finding of fact or a resolution of law by [the CRB]. The statute provides that the settlement is an adjustment of rates and terms by the parties that we must adopt."[40]

36. The interactive services' attempt to invoke prior settlements of rate court proceedings as appropriate benchmarks with which to set the rate in future proceedings risks discouraging settlement of any CRB proceeding. Supposed reliance on past settlements would effectively circumscribe or eliminate the need for the CRB to make the economic and factual determinations that it is tasked to make, and to establish rates as a result of those determinations, every five years.

37. Furthermore, I understand that in *Phonorecords I*, the CRB rejected an approach similar to the Digital Services' approach here. There, the RIAA argued that the CRB should begin its rate analysis with the rate established in the 1981 Phonorecords Proceeding, adjust that rate upward to reflect the then-current average retail CD prices, and then adjust it downward pursuant to the 801(b)(1) factors.[41] RIAA argued for using the 1997 industry settlement rate as an alternative.[42] The CRB rejected using the 1981 or 1997 rates because it found that the market

[39] Phonorecords I Final Rule, 74 Fed. Reg. at 4514.

[40] *Id.* at 4515.

[41] *Id*. at 4521

[42] *Id.*

"has changed substantially relative to the types of products and the modes of product distribution."[43] So too here has the market for interactive streaming completely changed from what existed at the time of the 2008 and 2012 settlements.[44]

IV. The Subpart A Settlement Is Also An Inappropriate "Benchmark"

38. I understand that certain of the Digital Services are also purporting to rely on the Copyright Owners' settlement in this Proceeding of the Subpart A rates for permanent digital downloads and physical phonorecords ("Subpart A Settlement") as a "benchmark."[45]

39. Let me be clear: the Copyright Owners resolved Subpart A but they have not resolved rates and terms implicated by the existing Subparts B or C. The Subpart A Settlement did not address, much less "ratify," the existing Subpart B and C rates by settling the rates for completely different products, on completely different terms than those set out in Subparts B and C. The Digital Services' attempt to misuse the Subpart A Settlement as a "benchmark" for Subpart's B and C is misplaced, for several reasons.

40. *First*, the Subpart A royalty rate for digital downloads and physical phonorecords is a per-unit rate, a structure for the payment of mechanical royalties that has been in place since the 1909 Copyright Act came into being and covered piano rolls, and has worked effectively and transparently through multiple changes in formats over the course of the past century. It is not at all based on a percentage of the revenues earned by record labels (the licensees of mechanical rights in the case of Subpart A products) from the sale of the downloads or physical records.

---

[43] *Id.*

[44] *See* Israelite WDS ¶¶ 103-106.

[45] *See, e.g.*, Mirchandani WDS ¶ 60 ("[T]he Rights Owners recently ratified the economic foundation of the existing regulatory scheme when they settled with the major record labels and agreed to rollover the Subpart A rates for another five years."); Leonard WDS ¶¶ 40-44 (calculating a "weighted average price per download" and an "effective" Subpart A royalty rate expressed as a percentage of revenue).

41. In this respect, the Subpart A royalty structure is far more similar to the per-play rate proposed by the Copyright Owners in this case, which is also a consumption-based rate, than it is to the current Subpart B and C rates or the rates that the Digital Services are proposing in this Proceeding. The proposals of the Digital Services (other than Apple) start from the calculation of a percentage of revenue, which revenue the interactive services seek to further diminish in their rate proposal by permitting certain categorical deductions from the revenue pool and lowering rates to accommodate discounted pricing schemes (no less off of a compulsory license). This is not the structure contemplated in Subpart A.

42. Indeed, to the extent that the price of digital downloads may have risen during a particular period, as Dr. Leonard calculates,[46] any increase in revenues to the record labels resulting from an increase in the price (or otherwise) would have inured to the benefit of the record labels. Likewise, under the Copyright Owners' proposal in this case, any increase in revenues, or the continued or further diversion of revenues earned by Digital Services from their music services to other parts of their businesses during the rate period, will inure to the benefit of the Digital Services. Under the Copyright Owners' rate proposal, just as under the Subpart A settlement, the Copyright Owners' per-unit royalty will remain fixed, in recognition of the inherent value of the music embodied in the interactive stream, regardless of the business structure adopted by the interactive streaming service or the subscription fees it chooses to charge (or not charge, as the case may be). Any revenue above such fixed cost is the Digital Services' to retain.

43. *Second*, there are a host of critical differences in the creative relationship between record labels and the Copyright Owners, as well as differences between the methods of creation,

[46] Leonard WDS ¶ 40.

delivery, and consumption of permanent digital downloads, on the one hand, and interactive streams, on the other, that make the Subpart A settlement an inadequate benchmark.

44. A consumer that purchases a permanent download or physical record can play that download or record as many times as he or she likes. The consumer's access is limited to the library that consists of the downloads and records that he or she has purchased. If the consumer wants access to the millions of works that are available on an interactive streaming service, she would have to purchase each one separately (or as part of an album). One of the primary draws of interactive streaming is precisely the accessibility provided by an on-demand library that consists of millions of works any or all of which can be accessed (or not) as the consumer chooses for one monthly subscription price (or for free, in the case of Spotify's ad-supported service, and effectively for free with Amazon Prime Music, which is provided as a "benefit" of Prime Membership).

45. Moreover, in the case of permanent downloads and other Subpart A products, the mechanical rights to the musical works are licensed by record labels to create another completely separate copyrighted work: the sound recording. The record labels then distribute their sound recordings (either themselves, or through a third-party distributor). In contrast, the Digital Services that license the mechanical rights in the musical works as embodied in the sound recordings do not create any copyrighted work, but merely copy and distribute both the copyrighted sound recording *and* the musical work embodied therein. As a result, "[i]n the digital environment, music services are functionally equivalent to the distributors and retailers that sold music under the historical business model . . . ."[47]

[47] **CO EX. R-171**, *In the Matter of Music Licensing Study*, U.S. Copyright Office, Docket No. 2014-03, Comments of the Digital Media Association ("DiMA"), at 3.

46. Further, unlike with record labels or physical recording distributors, where the connection with the consumer ends with the purchase of the recording, there is a continuing relationship (and witting or unwitting sharing of immense market data) between consumers and the Digital Services. The record label cannot obtain additional data from the consumer – such as how many times he or she has played the record or even what records the consumer is playing and when – and does not retain that consumer within its ecosystem to enable it to collect even more data from that consumer or to market other products or services to that consumer. In contrast, the Digital Services receive a wealth of data from their subscribers and can monetize and otherwise use to their advantage this data as well as use music as an attraction (or benefit) to help sell other goods or services within their ecosystems.

47. *Third*, the Copyright Owners spent millions of dollars to litigate the Subpart A rates in *Phonorecords I* and did so at a time when the digital download market was growing and the interactive streaming market was virtually non-existent. The CRB determination resulted in the existing $.091 cent rate being rolled forward. While I disagreed with that conclusion, that was the rate that was set.[48]

48. Our decision to roll that rate forward in 2012 reflected our assessment of the costs associated with *Phonorecords I*, its outcome, and the risk and costs of a further proceeding. It also reflected our recognition that physical products such as CDs were a rapidly declining business and devoting our limited resources to obtaining a rate increase in a business that was sharply diminishing made little practical or economic sense.

[48] The CRB also set the rate for ringtones at 24 cents per unit made and distributed. *See* Phonorecords I Final Rule, 74 Fed. Reg. at 4526. This determination was based on agreements negotiated in the free market before it was clear whether or not ringtones were eligible for the Section 115 license. *Id.* at 4518. I understand that the Digital Services' experts, while seeking to rely on Subpart A, ignore the ringtone rate.

49. Our decision to settle again in 2016 on a "roll forward" basis reflects all of these same risks and costs but also included our recognition that permanent digital downloads, just like physical products in 2012, are a rapidly declining business (indeed, the drop in mechanical income from permanent digital downloads is accelerating year to year).[49] We believe that the mechanical income from permanent digital downloads and physical product will become increasingly inconsequential during the 2018-2022 period as music consumers continue to shift to the interactive streaming model. Expending our precious resources in fighting for a higher rate in a declining business made little sense.

50. In short, for all of the foregoing reasons, there is no basis on which the Digital Services can reasonably advance the Subpart A settlement as a benchmark for supposedly similarly rolling forward the Subpart B and C mechanical rates (even as these Digital Services eviscerate the Subpart B and C rates they profess to be rolling forward by including deductions to the already gerrymandered revenues and reduce or eliminate the minima and floors).

V. The Digital Services Benefit From The Existence Of The Compulsory License

51. As I noted in my Direct Statement, the need for the compulsory license has long been the subject of debate, and in the digital age that debate has become even more pronounced. These price controls continue to suppress the rates that songwriters and publishers are paid for the use of their property. Because the licensees always have the option of obtaining the compulsory license, unless the licensee requires other non-compulsory rights or has other business reasons for paying more than the law may currently require, the statutory rate effectively acts as a ceiling on what can be achieved in direct negotiations undertaken in the shadow of the compulsory license.

[49] *See* Israelite WDS ¶ 70.

52. Certain of the witnesses for the Digital Services have argued that the compulsory license actually ***favors*** the musical works rights owners. For example, Google's expert, Dr. Leonard, citing redacted testimony from Ms. Levine, asserts that "it has been the copyright owners, not Google, that have used the Section 115 compulsory license as leverage in the negotiations."[50]

53. In truth, Ms. Levine and Mr. Leonard have it backwards. The compulsory license acts as a ceiling as it is compulsory only with respect to the rights owner. If a service wants to use musical works, it can do so at the statutory rate. The owner of the musical works, if it does not like the rate, cannot decline to allow its property to be used. It cannot insist upon receiving a higher rate. The user of the works can choose to try to negotiate a lower rate, or can choose not to use the works at all. The licensor has no choice, the licensee does. There is nothing compelling the licensee to procure a license.

54. If the Digital Services, including Google, really believed that the compulsory license benefits the copyright owners to the detriment of the Digital Services (resulting in higher rates than they would pay absent the compulsory license), they would be supporting the NMPA and NSAI in their legislative efforts to repeal Section 115. But instead, they have argued against such a repeal.[51] Their legislative stance confirms their belief that the compulsory license favors

---

[50] Leonard WDS ¶ 53.

[51] *See, e.g.*, **CO EX. R-171**, *In the Matter of Music Licensing Study*, U.S. Copyright Office, Docket No. 2014-03, Comments of DiMA, at 19 (arguing that the Section 115 license is "vital," in part because it provides "a mechanism for immediate license coverage, thereby negating the rights owner's prerogative to withhold the grant of a license."); **CO EX. R-172**, *In the Matter of Music Licensing Study*, U.S. Copyright Office, Docket No. 2014-03, Reply Comments of DiMA, at 14-15 (stating that "DiMA does not support the elimination of the Section 115 compulsory license," and citing in support comment by Brigham Young University that Section 115 is "the only part of the law . . . where the user has some refreshing leverage in the music licensing world."). As DiMA's submission notes, it represents and advocates for the interest of its membership including four of the five licensee participants in this proceeding, namely Apple, Amazon, Google and Pandora. **CO EX. R-171**, *In the Matter of Music Licensing Study*, U.S. Copyright Office, Docket No. 2014-03, Comments of DiMA, at 1. Spotify separately filed comments supporting the maintenance of the compulsory license as well. **CO EX. R-170**, *In the Matter of Music Licensing Study*, U.S. Copyright Office, Docket No. 2014-03, Comments of Spotify, at 1, 3-6.

them, ***not*** the songwriters and publishers. The Digital Services' feigned frustration with the compulsory license is belied not only by common sense, but also by their own policy positions as conveyed to the U.S. Copyright Office.

VI. Dr. Katz's Purported Justifications For Google's Proposal To Eliminate The Mechanical-Only Floor Are Irrelevant And Inaccurate

55. As I have mentioned above, certain of the Digital Services, while arguing that the Subpart B and C rates should be rolled forward and are suitable benchmarks in this Proceeding on the theory that they were the subject of a negotiation, at the same time want to modify their own proffered benchmarks to eliminate one of their core terms – the mechanical-only floor (as well as to add in deductions from revenue).

56. Pandora's expert, Dr. Katz, testifies that "the mechanical-only floor is no longer warranted" for two reasons. First, Dr. Katz states that "a participant in [the 2012 settlement] negotiations has testified that the mechanical-only floor, although agreed to as a concession to the publishers, was considered by the services to be a concession without economic impact because the services viewed it as highly unlikely that the mechanical-only floor would ever get triggered."[52] Presumably Dr. Katz is referring to the testimony of Mr. Parness, which I discuss above and which is not correct.

57. The second justification Dr. Katz offers for eliminating the mechanical-only floor is his opinion that "the marketplace for performance rights licenses has changed and may continue to change," has become "fragmented," and is no longer "stable."[53] Dr. Katz then posits a number of examples of this supposed "fragmentation" or "instability," none of which are based on actual facts or data and which are, in fact, either untrue or are highly exaggerated.

[52] Katz WDS ¶ 90.

[53] *Id.* ¶¶ 10, 90-91.

58. As a threshold matter, I do not believe that what digital services currently or may in the future pay for performing rights licenses is relevant to this proceeding. Performance rights are not subject to Section 115 and rates to license these rights are negotiated between PROs and licensees or, in the absence of voluntarily negotiated agreements (at least with respect to ASCAP and BMI, which license the overwhelming majority of the performances in the U.S.), by rate courts pursuant to consent decrees. Aside from wading into a rate issue that is outside the scope of the statutory authority of the CRB, were it to consider performance rates, the CRB would have to consider evidence addressed to a host of issues that are not before it (but that are before the PRO rate courts). By way of example, the CRB would have to hear evidence respecting the extent to which performances on interactive streaming services have cannibalized or impacted revenues from performances on terrestrial radio, non-interactive streaming services, and satellite radio, both now and prospectively during the five year term of the mechanical rate being set in this Proceeding.

59. But it is not just that Dr. Katz's assertions would require the CRB to hear evidence outside their jurisdiction, it is also that his assertions are either factually without basis or exaggerated. Dr. Katz first claims that, after the 2012 Settlement was finalized, "a fourth U.S. PRO (GMR) emerged, creating another entity from which interactive streaming services have to secure a license, this one not subject to rate-court oversight."[54] While GMR is a new PRO, I am aware of no evidence that the emergence of GMR has resulted in any change to the rate that digital services pay for performing rights licenses, or that it has had any other financial impact on digital services, and Dr. Katz has not provided any. I understand from public information that GMR represents the musical works of fewer than 100 songwriters.

[54] *Id.* ¶ 91.

60. Dr. Katz then states that "music publishers began to threaten to withdraw from the PROs, thereby further increasing the number of entities from which streaming services might potentially have to secure licenses."[55] Dr. Katz glosses over the entire history of copyright owners' efforts to withdraw certain rights from certain PROs and the Rate Courts' rejection of such withdrawals.

61. Beginning in 2011 and 2012, certain music publishers withdrew from ASCAP and BMI the rights to license their musical works to digital services, primarily because those publishers believed that the ASCAP and BMI rate courts were undervaluing performance rights licenses for the works that those publishers own or administer.

62. Following those withdrawals, and during rate court proceedings between Pandora (Dr. Katz's client), on the one hand, and ASCAP and BMI, on the other, the ASCAP and BMI rate courts ruled that the publishers' withdrawals were not permitted under the ASCAP and BMI consent decrees.[56] The ASCAP decision was appealed and upheld on appeal.[57] Thus, absent any change to the consent decrees, the publishers cannot partially withdraw any rights from the PROs. Simply put, the supposed "fragmentation" does not exist.

63. Following those rate court decisions, the PROs and the music publishing and songwriting community petitioned the Department of Justice ("DOJ") to modify the consent decrees to permit partial withdrawals and to otherwise modify the consent decrees. The DOJ, after a lengthy investigation that included the digital services making submissions to the DOJ

[55] *Id.*

[56] *See In re Pandora Media, Inc.*, Nos. 12-cv-8035, 41-cv-1395, 2013 WL 5211927 (S.D.N.Y. Sept. 17, 2013).

[57] *In re Pandora Media Inc.*, 785 F.3d 73 (2d Cir. 2015).

objecting to any modifications, rejected supporting any modification permitting partial withdrawals.[58] Again, the alleged fragmentation is not occurring.

64. Dr. Katz implies that perhaps the publishers may opt to withdraw from the PROs completely. It is pure speculation. Dr. Katz points to no actual withdrawals from the PROs.

65. Dr. Katz also adds that "at least some PROs are undertaking efforts to provide only 'fractional' licenses to the works in their repertories, thereby requiring streaming services to secure licenses from every co-owner of a work, whether affiliated with a PRO or not," and that those "efforts" "threatened to increase (and in some cases did increase) the numbers of entities with which interactive services had to negotiate to secure performance rights."[59]

66. Here too Dr. Katz is simply wrong. The licenses issued by the PROs have ***always*** been fractional licenses, a fact recognized by the U.S. Copyright Office.[60] No PRO can grant rights owned or controlled by a writer or publisher that is affiliated with a different PRO. To do so would require each PRO to collect royalties for shares of works that it does not control and pay those royalties to PROs affiliated with writers that are not part of that PRO. The view that the PROs have always issued fractional licenses was affirmed by BMI rate court Judge Stanton in a September 2016 decision, in which he found that the consent decree "neither bars fractional licensing nor requires full-work licensing."[61]

67. In short, Dr. Katz's statements regarding the "fragmentation of the licensing of musical compositions' public performance rights" – which he argues is the basis for eliminating

[58] **CO EX. R-190**, Statement of the Department of Justice on the Closing of the Antitrust Division's Review of the ASCAP and BMI Consent Decrees, at 4 (Aug. 4, 2016), *available at* https://www.justice.gov/atr/file/882101/download.

[59] Katz WDS ¶ 91.

[60] **CO EX. R-173**, Views of the United States Copyright Office Concerning PRO Licensing of Jointly Owned Works, at 3, *available at* https://www.copyright.gov/policy/pro-licensing.pdf.

[61] Opinion & Declaratory Judgment, *US v. BMI*, 64-cv-03787 (LLS), ECF No. 100, at 6 (S.D.N.Y. Sept. 16, 2016).

the per-subscriber floors contained in the very rate structure that he and his client are offering as a "benchmark" – are thus not only beyond the jurisdiction of the CRB to consider, they are also untrue.

VII. Mr. Page's Statements Regarding Piracy And Global Publishing Revenues Are Unsubstantiated And Do Not Support Spotify's Rate Proposal

68. Spotify's Will Page testifies at length regarding his belief that Spotify has reduced piracy.[62] Most of Mr. Page's discussion centers around events outside of the United States.[63] I do not believe there is a direct correlation between the level of music theft in the U.S., which has been on the decline since the early part of this century, and the availability of Spotify (or any other interactive streaming service). To be sure, NMPA and its members encourage the development of legitimate channels of access to music. But there are a host of factors that have contributed to the decline in music theft, including litigation and legislation efforts undertaken by both the NMPA and the RIAA,[64] education of the public regarding the costs of music piracy, and the emergence and development of a host of new music products and distribution channels, including interactive streaming services, non-interactive streaming services, digital video services, satellite radio services, and a multitude of apps and related products.

69. Mr. Page also argues that the Copyright Owners should be paid less because, he claims, music publishers are receiving roughly the same amount as record labels of what he refers to as the "pie" that consists of the "global value" of music.[65] While I cannot vouch for the accuracy of Mr. Page's numbers, his assessment proves the Copyright Owners' point: globally,

[62] Page WDS ¶¶ 4-23.

[63] *Id.* ¶ 6.

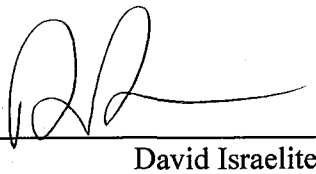
[64] *See* Israelite WDS ¶ 15

[65] Page WDS ¶ 36.

i.e., in markets outside of the U.S. where neither publishers or labels are constrained by a compulsory license, the value of the songs and the recordings are closer to parity.

I declare under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information and belief.

Dated: February 13, 2017



David Israelite

THE WITNESS: Thank you.
JUDGE STRICKLER: Thank you.
JUDGE BARNETT: Do the Copyright Owners have another witness?
MR. ZAKARIN: We do.
JUDGE BARNETT: Let's have him.
MR. ZAKARIN: We call David Israelite.
JUDGE BARNETT: Please raise your right hand.
Whereupon--

DAVID ISRAELITE,

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. ZAKARIN:

Q. Good afternoon, Mr. Israelite. Could you tell the Judges what your present position is?

A. I'm the president and CEO of the National Music Publishers Association.

JUDGE BARNETT: Before you go further, could you state your full name and spell your last name for us.

THE WITNESS: Sure. It is David Mark Israelite, I-s-r-a-e-l-i-t-e.

JUDGE BARNETT: Thank you.

BY MR. ZAKARIN:

Q. How long have you occupied that position at the NMPA?

A. I'm in my 13th year.

Q. Could you briefly tell the Judges your educational and employment background.

A. I went to a small liberal arts college in Liberty, Missouri called William Jewell College. I then attended the law school at the University of Missouri. From there I went and practiced at Missouri's largest law firm called Bryan Cave where I served as a litigation associate for three years.

I then moved to Washington, D.C. to serve Missouri's senior United States Senator, Christopher Bond, as his administrative assistant, which is another word for chief of staff.

And I did that for two years. I then came back to Missouri to run his reelection campaign in 1998. I then came back to Washington and was hired as the political and government affairs director at the Republican National Committee for the 2000 presidential cycle, where I served for those two years during that cycle.

And at the conclusion of that election, I was asked by the newly-appointed attorney general,

John Ashcroft, to join the Justice Department where I served him as deputy chief of staff and chief counsellor. And while there also was appointed by him to chair a task force on intellectual property. And I served with him for the four years that he was attorney general.

And then when I left that position, I was hired at NMPA.

Q. And I ask you to turn in your book, I think it is Exhibit 3014, which is your direct witness statement or, stated more properly, your witness direct statement. And I ask you if you can identify that document?

A. Yes. This was my witness statement for this proceeding.

Q. Please look at, I think it is page 42, and ask you if you can identify the signature.

A. Yes. That's my signature.

Q. Mr. Israelite, was your statement accurate and truthful to the best of your belief when you submitted it?

A. Yes.

Q. Does it remain accurate and truthful to the best of your belief today?

A. It does.

MR. ZAKARIN: Okay. I offer 3014 in evidence.

MR. ELKIN: Objection, based on the reasons set forth in the motion in limine.

JUDGE BARNETT: Thank you.

MR. STEINTHAL: Google joins in that objection.

MR. ISAKOFF: We also join.

MR. MANCINI: We join.

JUDGE BARNETT: Thank you. 3014 is admitted, subject to review pursuant to the pending motion in limine, preliminary motion.

(Copyright Owners Exhibit Number 3014 was marked and received into evidence.)

BY MR. ZAKARIN:

Q. Mr. Israelite, I am not going to go through in any great detail the paragraphs of your witness statement, but what I want to do is summarize some of them.

As set forth in paragraphs 8 through 14 of your statement, you can turn to them if you want to to refresh your recollection, can you briefly explain to the panel what the NMPA is and what it does?

A. NMPA is a trade association that

represents the music publishing industry and their songwriter partners. We're celebrating our 100th year this year, our centennial.

As a trade association we provide many different types of services to our membership. The one that is probably most traditionally thought of is as a trade association, we lobby on behalf of our industry before the Federal Government, mostly.

JUDGE STRICKLER: Mr. Israelite, quick question for you. In paragraph 8 you say you represent American music publishers and their songwriting partners. The phrase "songwriting partners," does that simply mean songwriters?

THE WITNESS: Yes, sir.

JUDGE STRICKLER: Thank you.

THE WITNESS: So we lobby Congress on behalf of the songwriting industry and music publishing industry. We lobby other government agencies, Federal Government. We also represent the industry in rate proceedings, obviously, and this is our -- my third one.

We bring quite a bit of litigation on behalf of the industry. And so we often are representing the industry in litigation. We also end up doing quite a bit of what we call model

business deals, which sometimes comes from the litigation and sometimes comes from direct interaction, but we have tried to serve a function of helping the business work in many areas where it is challenged.

We also do a lot of public relations and communication-type functions. The one that probably we're most known for is we're the ones that certify songwriters as reaching gold or platinum status and designate them and give out awards for gold and platinum achievements.

And we hold public meetings. I speak often, write often on behalf of the industry. And that generally summarizes what a trade association does.

BY MR. ZAKARIN:

Q. I ask you to turn to what was attached to your written direct statement but are separately marked as Trial Exhibits 306, 2500, 2501, and 2502. And they should be attached, I believe, as I said, they are separately in the binder, but they are also attached to your witness statement.

Can you identify these documents, dealing first with 306?

A. Document 306 is a document that was

prepared by my staff that analyzes revenue information for our members.

Q. I will come back to that document momentarily. Can you go through Exhibits -- what are 2500, 2501, and 2502 as well?

A. Yes. 2500 is also a document that was prepared by my staff that goes through an analysis of 2014's revenue and explains how we went from the raw data that we collected to the conclusion that I believe I announced at our annual meeting in that year or it would be the next year.

Q. Now, dealing with Exhibit 306, and it may apply to 2500 through 2502 as well, what is the source of the information that is embodied in those exhibits?

A. The source of the information is that our membership very recently started turning into NMPA their revenue information. And they did it for the purpose of us being able to administer a new program of collecting dues from our members.

And in the past, NMPA never collected real dues from our members. We were funded almost exclusively from a subsidiary that we owned called the Harry Fox Agency.

And that agency was profitable enough to

fund the parent trade association. And, as a result, our members paid nominal dues of -- I think it was $100 per member. That's very different than most trade associations which charge actual dues.

A few years ago when it became clear that the Harry Fox Agency could no longer financially support its parent trade association, I had to transition the trade association into a dues-collecting trade association, which is the more typical type.

And so my membership started to have to turn in to me their revenue information because that became the basis of how much dues they each paid, because it was proportional.

And one of the by-products of collecting that information for the first time is that I was able to then actually analyze industry data that never really existed in this form before. And it was one of the positive by-products of this other dues collection process that I started to do some analysis and share some of that analysis with my membership.

Q. Okay. You talked about the Harry Fox Agency. What type of income was it that Harry Fox collected?

A. The Harry Fox Agency was a company that was in the business of licensing mechanical rights and collecting the money for mechanical rights and then distributing that to publishers. It was used by a very large segment of the industry as kind of an aggregator of that process of mechanical rights.

So even though a licensee would have an option of going through the compulsory process to get a license, very few people actually did that. But what most licensees would do was take the license from the Harry Fox Agency and then pay the Harry Fox Agency.

And the Harry Fox Agency took a commission for that activity. And that commission was sufficient for a time to fund itself and to also fund NMPA, which owned it.

Q. Is it fair to say that the diminution in mechanical income led to the divestment, if you will, of the Harry Fox Agency?

MR. ELKIN: Objection, Your Honor. This goes beyond the scope of the witness testimony.

MR. ZAKARIN: I will withdraw the question. I am going to offer Exhibits 306, 2500, 2501 and 2502 in evidence.

MR. ELKIN: I don't have any objections

at all. I would note that he hasn't yet laid a foundation for 2501 or 2502, but we're fine with that.

JUDGE BARNETT: Thank you. 306, 2500, 2501, and 2502 are admitted, I presume you mean subject to the pending motion in limine or is there nothing in the motion that affects these exhibits?

MR. ELKIN: We actually have no objections to these four documents at all.

JUDGE BARNETT: Okay, thank you. Then they are admitted outright.

(Amazon Exhibit Number 306 was marked and received into evidence.)

(Copyright Owners Exhibit Number 2500, 2501, 2502 were marked and received into evidence.)

BY MR. ZAKARIN:

Q. Mr. Israelite, looking at the first page of Exhibit 306, in the second, sort of the second category down you have a top box and there is a second box which deals with total industry actual revenue 2013, '14, and '15.

Do you see that?

A. Yes.

Q. I would ask you to look across. You have categories of income; mechanical, performance,

synch, other, and then a total. First of all, is that U.S. income?

A. Yes, this only measures U.S. revenue.

MR. ZAKARIN: This may be restricted material now that I'm looking at it, so I think we may have to --

JUDGE BARNETT: If you are going to get into the numbers, yes.

MR. ZAKARIN: I think we have to.

JUDGE BARNETT: If you are in the hearing room and you have not signed a nondisclosure certificate, please wait outside.

JUDGE STRICKLER: Which exhibit again, counsel?

MR. ZAKARIN: I am in 306.

MR. HARRIS: Your Honor, with the Court's indulgence, this material is NMPA's restricted material. Is it fine if they stay in for this examination?

JUDGE BARNETT: Yes. NMPA -- we're holding to NMPA confidential information, correct?

MR. ZAKARIN: Yes, that's the only thing I am dealing with in this exhibit. In fact, I don't think I am going to get into much else.

JUDGE BARNETT: Okay.

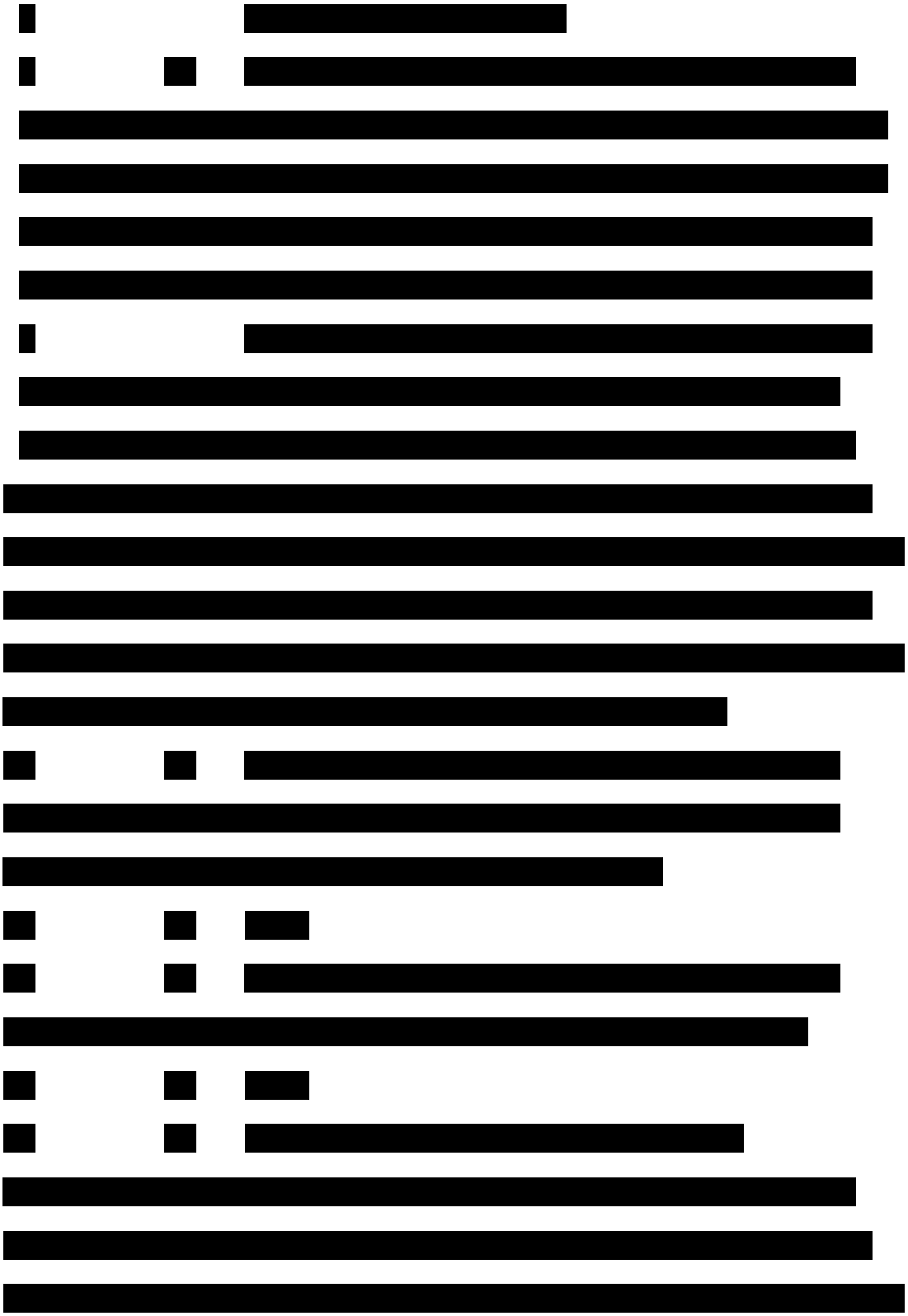
MR. ZAKARIN: That's restricted. At least I hope not.

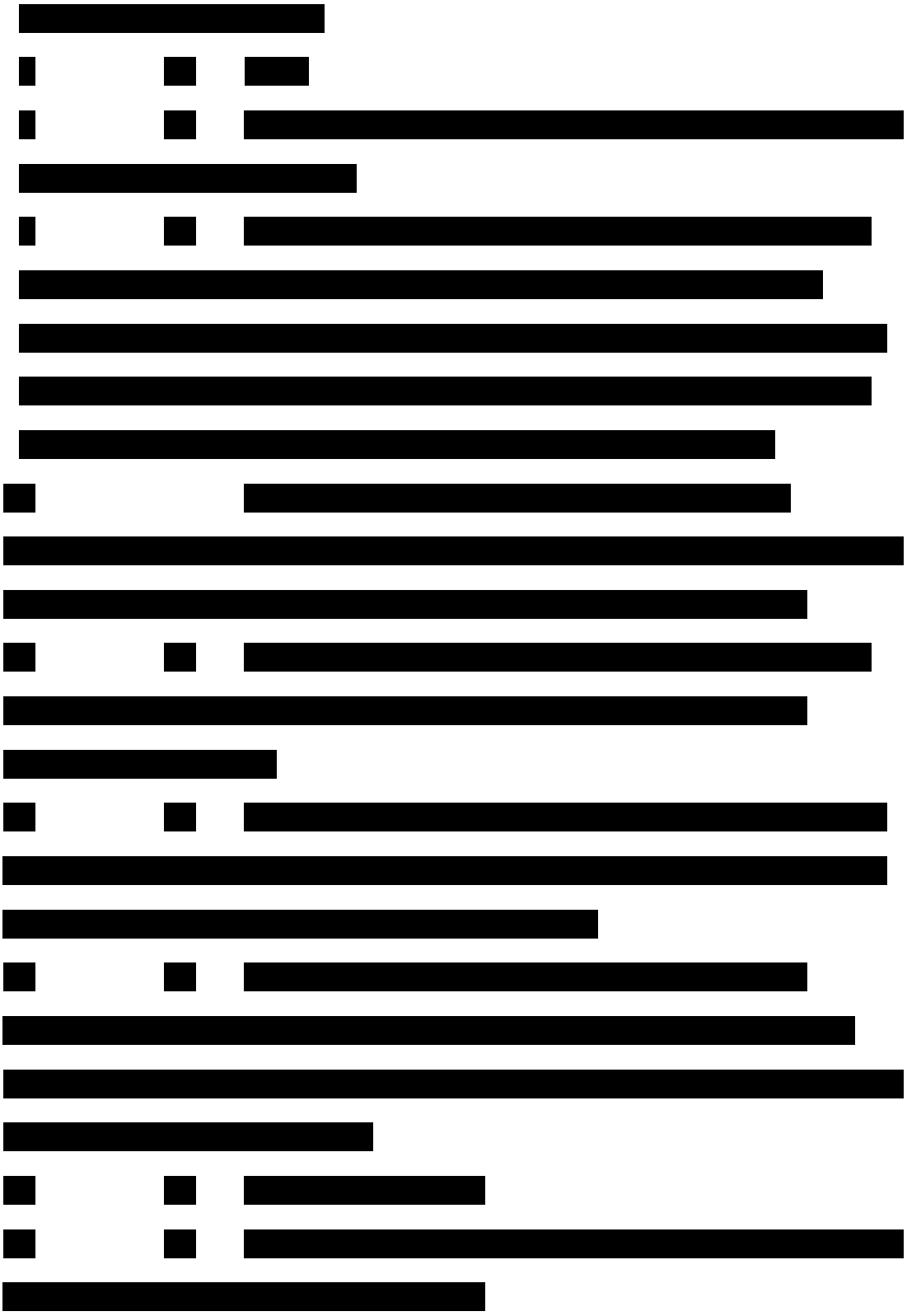
JUDGE BARNETT: Thank you.

(Whereupon, the trial proceeded in confidential session.)

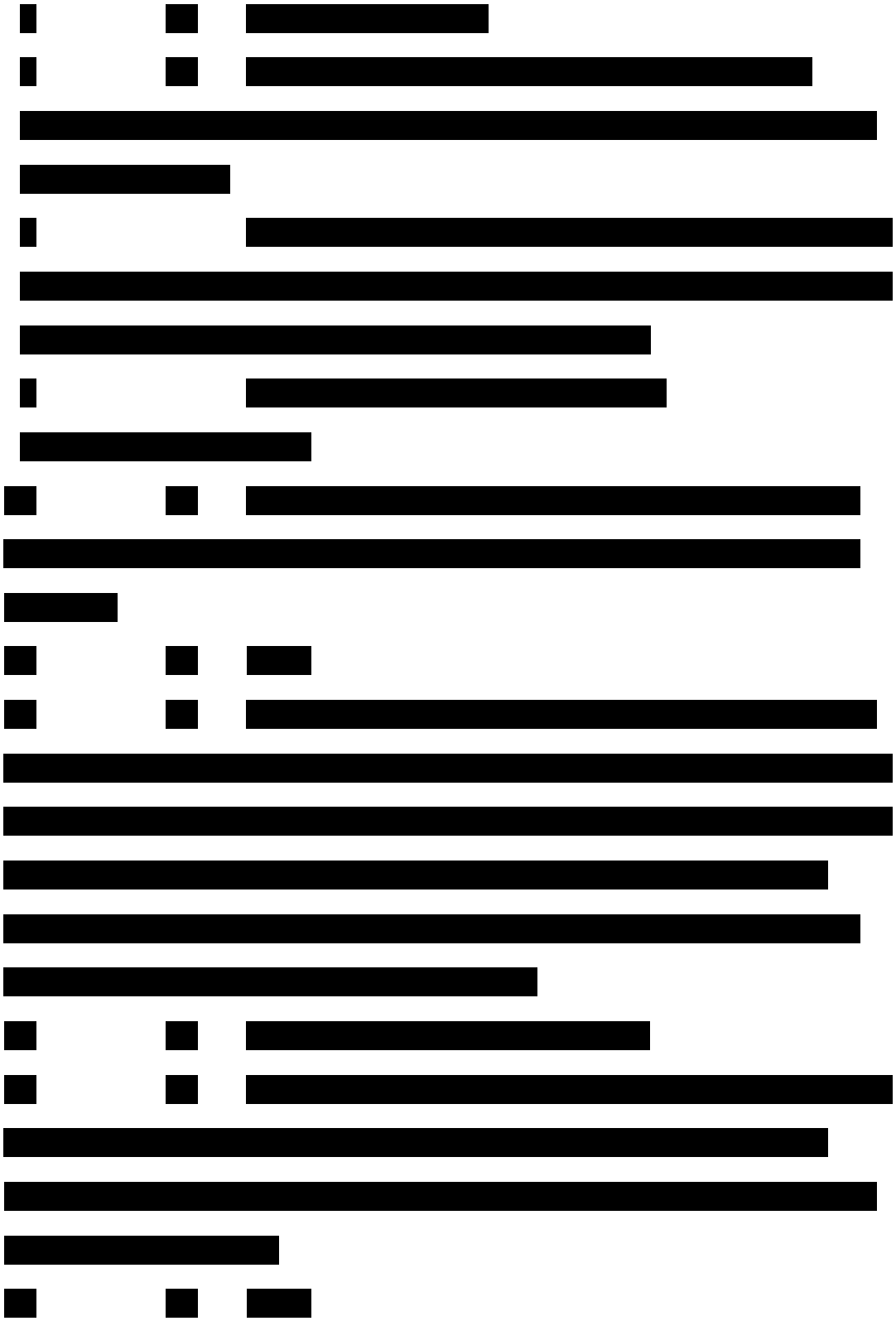
C O N F I D E N T I A L S E S S I O N

[redacted]





[redacted]



[redacted]

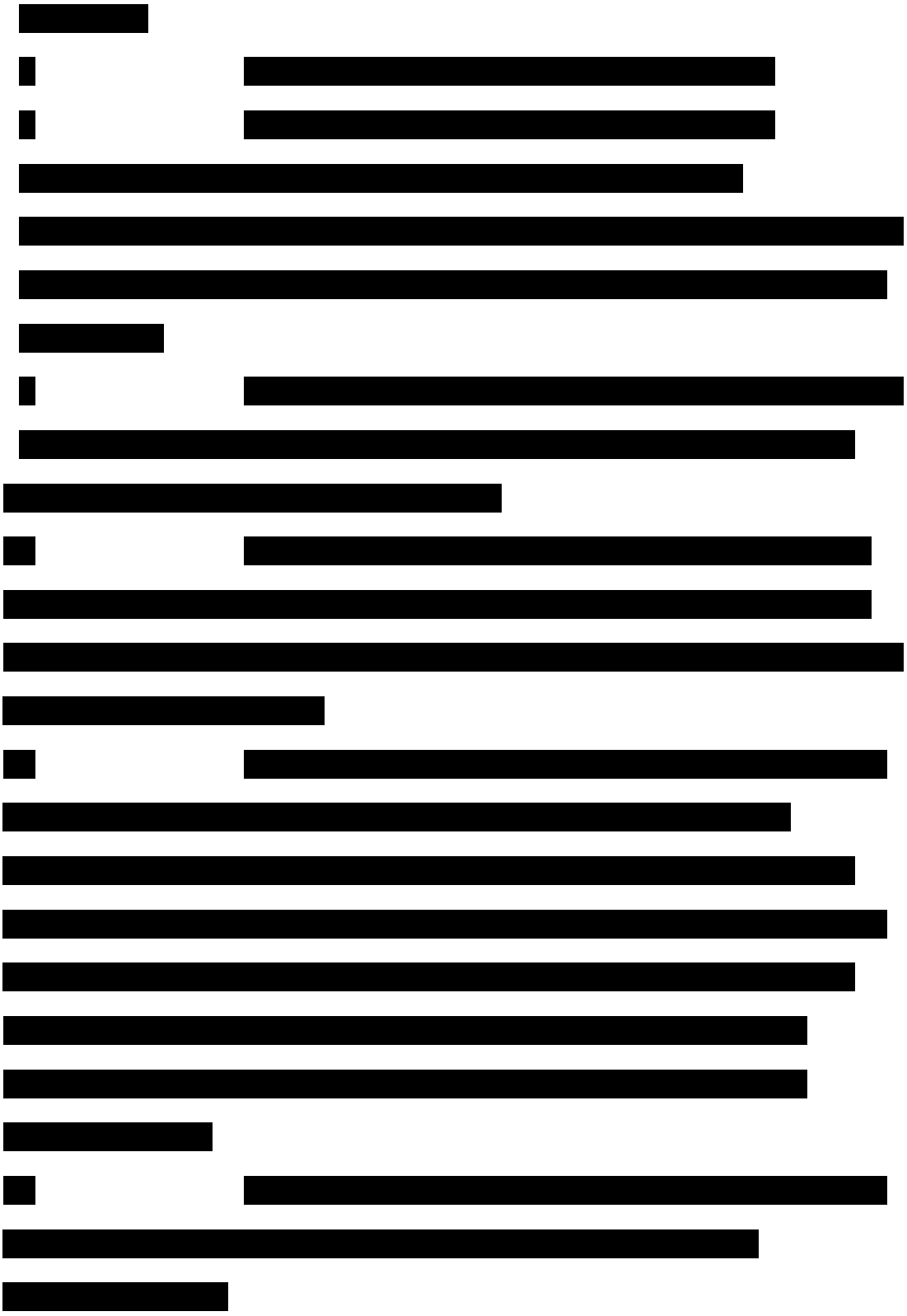
[redacted]

[redacted]

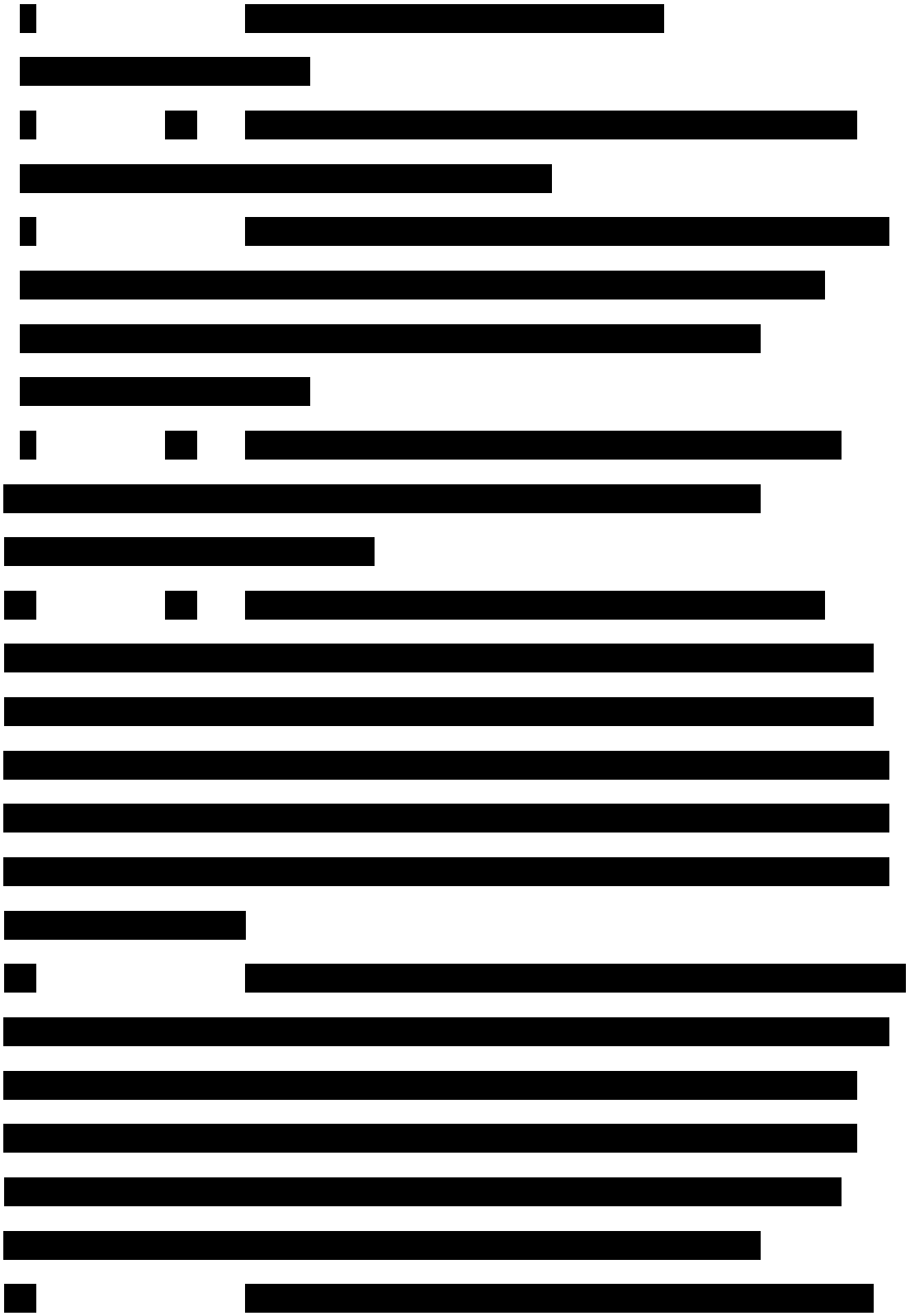
[redacted]

[redacted]

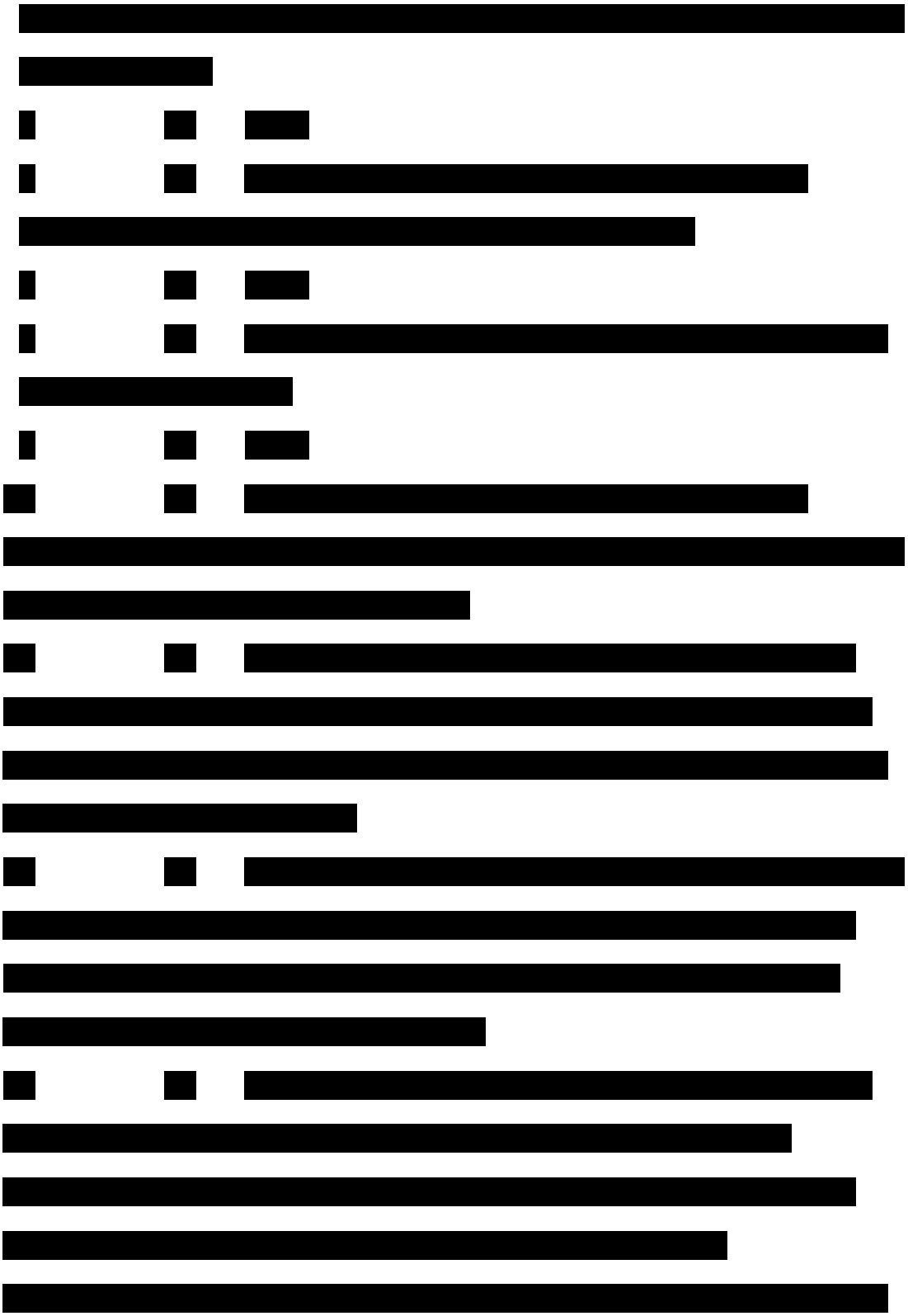
[redacted]



[redacted]

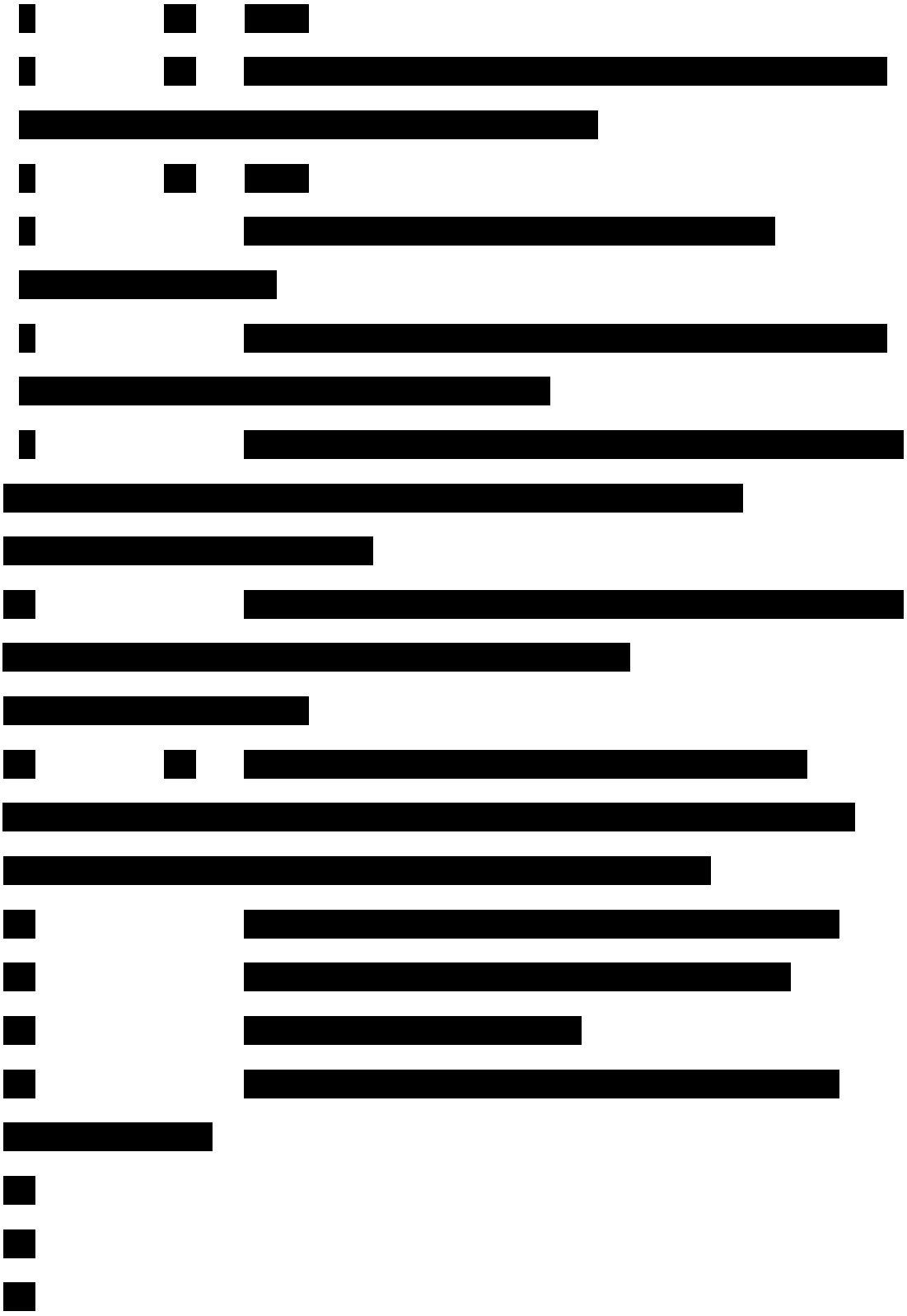


[redacted]



[redacted]

[redacted]



O P E N S E S S I O N

BY MR. ZAKARIN:

Q. I have to be more sensitive to that. Any way, Mr. Israelite, I want to turn to the current Subpart A settlement that the NMPA reached with the record labels. And I think it was even published today, perhaps.

Is it a fair characterization to say that the Subpart A settlement essentially rolls forward the per unit basic mechanical rate of 9.1 cents for each physical recording and digital download manufactured and sold?

A. Yes.

Q. And it rolls forward as well the 1 and a half percent per month late fee?

A. Yes.

Q. What was the purpose of the late fee?

A. Well, the purpose of the late fee from Phono I was something that the Copyright Owners requested from the Court and that the Court granted.

JUDGE BARNETT: Excuse me. It is your bag that is blocking the door. Your body was fine once you got out of the path. Thank you. I apologize.

Could you ask the question again, please,

Mr. Zakarin?
BY MR. ZAKARIN:
Q. I think I said what is the purpose of the late fee? Is that where I was?
A. Yes. The purpose of the late fee that we requested and that the Court granted in Phono I was to give appropriate compensation for the songwriters and copyright owners, if they were paid late.
Q. And at the time that it was adopted, did you intend that it would be applied only to Subpart A?
A. No. I believe that the late fee applies to the totality of a Section 115 license.
Q. Now, moving forward, are you aware that the Services in this proceeding have argued that the settlement of the Subpart A should be a benchmark to be considered by the panel as justifying rolling forward the existing B and C rates, albeit their proposals do not actually roll them forward? Are you aware of that?
A. I'm aware that they have made arguments to that effect, yes.
Q. Okay. And in paragraphs 38 through 49 of your rebuttal statement, you explain why the Subpart A settlement is not an appropriate benchmark for

setting Subpart B and C rates in this proceeding.

And rather than going through each of those paragraphs, I would ask for the panel if you can summarize the reasons that you set forth in those paragraphs?

A. Sure. First, I don't think that settlement should be used as benchmarks or weapons against the parties who settle because I think there is a strong public policy interest in encouraging settlements. In fact, I think the Copyright Act does encourage those settlements.

And if the parties are then punished in some way by those settlements being used as benchmarks where the parties don't feel that's appropriate, then I think that would discourage settlements, and I think that's a bad outcome.

JUDGE STRICKLER: Are you familiar with the settlements that occurred in the Webcaster settlements, the Webcaster Settlement Act?

THE WITNESS: I am somewhat familiar with those, yes.

JUDGE STRICKLER: Are you aware in those settlements there was language to the effect that none of the terms or the provisions of this, of the settlements shall be usable as evidence -- I am

paraphrasing here -- usable as evidence or precedent in a future proceeding? Are you aware of that?

THE WITNESS: I am not familiar with the language that was used, but I understood that was the intent when they offered it to Congress.

JUDGE STRICKLER: And were you aware of that when you entered into the 2008 settlement?

THE WITNESS: Yes. When we entered into the 2008 settlement, we specifically negotiated that they would be non-precedential.

JUDGE STRICKLER: It says that in the settlement?

THE WITNESS: I believe that we agreed to language to that effect, yes.

JUDGE STRICKLER: There is language in the regulations that says the new rates will be established de novo. Is that what you are referring to?

THE WITNESS: Yes.

JUDGE STRICKLER: And only that language, that's the language you are referring to?

THE WITNESS: I -- I am aware that it says that the new rates would be set de novo, but I also believe that we had agreed upon non-precedential language in the settlement itself

is my recollection from ten years ago.

JUDGE STRICKLER: Will you be pointing to that in your testimony?

THE WITNESS: I don't believe that is in my testimony, no, Judge.

JUDGE STRICKLER: Thank you.

BY MR. ZAKARIN:

Q. I think that you were summarizing at this point why the -- why you believed that the Subpart A, Subpart A settlement should not be used as a benchmark in this proceeding.

A. Sure. My first reason, again, was philosophically, I think it wouldn't be proper to use settlements against parties because it would discourage the public policy purpose of encouraging settlement.

Secondly, specific to this settlement, this settlement was in large part consistent with my philosophy about CRB trials and with settlements, which is that I believe now in all three of the proceedings that I have tended to not want to litigate the rates that will not be economically important in the upcoming period.

And so when I look to this next five-year period that begins in January of 2018, I don't

believe that the Subpart A categories are going to be economically important to my industry.

And, as a result, I was highly encouraged to get those settled and out of the trial because I wanted this trial to focus on the categories that I thought would be economically significant, which are the interactive streaming categories.

That same philosophy is what drove the settlement in Phono I with the Subpart B categories, which I know you didn't ask me about, but it is the same philosophy about our settlements.

And so I don't think that the A roll-forward should be used as a benchmark because our agreement to roll forward those rates was not in any way our commentary on we thinking that those were the appropriate values of our Subpart A rights but, rather, we don't think economically they are going to make much difference in the next five years and, therefore, we didn't want them cluttering the focus of this trial. We would rather have that focus on the business models that we think will be economically important.

MR. ASSMUS: Your Honor, Mr. Zakarin is eliciting testimony from the witness regarding the nature and basis of the Subpart A settlement.

And you will recall we filed with Your Honor a motion to compel documents related to that settlement, and the original ruling, which of course we accepted, was denied, but on that basis we object to Mr. Israelite further explicating the reasons for and nature of the settlements, if we do not have access to the documents that would allow us to cross-examine him on that topic.

JUDGE BARNETT: Sustained.

MR. MARKS: And we would move to strike the last answer on that basis.

JUDGE BARNETT: Yes. The -- the answer will be stricken.

MR. ZAKARIN: I -- what they asked for was documents relating to negotiations. I didn't ask the witness a question about negotiations. And the witness didn't testify about negotiations.

What he testified to was his reasons for entering into the settlement, why he doesn't believe the Subpart A settlement is a benchmark. But it didn't deal at all with his negotiations with the other side. And I didn't ask him a single question about it. And he didn't offer anything in his answer about it.

JUDGE BARNETT: He talked about why he

was willing to settle and so forth. That's part of the negotiation equation. So the objection is sustained.

MR. ZAKARIN: I understand that, Your Honor. And respectfully, we accept the ruling on that.

BY MR. ZAKARIN:

Q. Mr. Israelite, the panel is aware of the Copyright Owners' proposal of rates and terms in this proceeding, and it is set forth in paragraph 32 of your written direct statement.

Can you explain to the Judges how the Copyright Owners formulated their proposal?

A. I think we thought about it in two parts. The first was what was the structure that we were going to propose and then, secondly, what would the numbers be that we plugged into that structure.

For the first part, we felt strongly that we wanted to have a structure that paid songwriters and music publishers on a per-stream basis. And so that became the driving force behind what our structure became.

The only flaw that we felt existed with that model was the potential that because, while we would get paid on a per-stream basis, that the

Services would not be charging their customers oftentimes on a per-stream basis and, in fact, the potential existed that they would use our songs to entice a consumer to agree to a monthly payment, and then if that consumer didn't use the service, they would still be collecting the money based on the availability of our songs, but we wouldn't see any of that because there might not have been any activity.

And, thus, the second part of the structure became very important, which was the per subscriber per month number, so that we would be protected if there was economic activity based on the value of our songs but no streaming that occurred.

So that became the two-part structure that formed the basis of our proposal. And then the numbers that were plugged in became an exercise, quite honestly, of retaining experts who gave opinions, giving us ranges of what they thought were reasonable given the standards and given the factors of this trial; and my membership, taking into consideration all of the different factors involved in making a proposal and coming to a conclusion on a number that they felt comfortable with that they

thought was reasonable.

BY MR. ZAKARIN:

Q. Now, the Services have offered testimony about the advantages of discounts provided by student plans and family plans, including benefits or supposed benefits to the Copyright Owners.

Can you explain to the panel why in your view including such discounts in the compulsory rate structure is inappropriate?

A. I feel very strongly that it would not be appropriate for the government through the compulsory process to force property owners to give these types of discounts. That's regardless of whether they are good for us or not.

I don't think it is the appropriate role of the rate-setting to make those decisions for the property owners. And so we believe that the compulsory rate process should just set the value of our intellectual property, and that if the property owners and the licensees jointly agreed that discounts makes sense, they can do that outside of the statute, which is exactly what has happened with some of the services.

But we violently object to the idea that that would be forced upon us in the rate-setting

process.

Q. There has also been testimony about the supposed funnel effects of Spotify's ad-supported service and how the Copyright Owners' proposal might negatively affect Spotify's free service.

Do you have a view about Spotify's free service?

A. I do. I think our proposal was agnostic to how the Services decide to charge their customers. Our proposal is designed to set an appropriate value every time that you stream a song.

And we have no control over how a licensee might then choose to monetize that activity. The Spotify Free service today, I would tell you, I think, is very harmful to songwriters. It is paying a very tiny fraction per activity as the paid services are paying.

There was a period, I believe last year, where about 30 percent of their customers paid for the Spotify service, about 70 percent used the free service, but those 30 percent who paid were generating more than 90 percent of the revenue for the company.

And so we look at the free service as something that we didn't have any ability to make

decisions about in terms of how many ads they run, whether it is an unlimited amount of time that a customer can use the free service, whether the same content is available on the free service or not, and our experience now looking at how it has been used by Spotify is that the free service has been very harmful, that the conversion is not working as promised, and it is not something that we feel that there should be a different rate structure if a licensee chooses to want to give it away with an ad-based model versus a paid-based model. We think the rate structure should reflect just the value.

JUDGE STRICKLER: Mr. Israelite, I have a question for you. It goes back to the testimony you gave just a moment ago, where you talked about how -- about family and student discounts.

And you said, correct me if I get it wrong, I thought you testified that that may be something that the Copyright Owners would be willing to do, but it is not something that government regulators should impose, if the parties can get together, the Copyright Owners and the Services, to agree to such discounts, then they will do that in the marketplace, but the government should not require that as part of the compulsory rate. Is

that a fair statement of your testimony?

THE WITNESS: That's saying it better than I probably said it, yes.

JUDGE STRICKLER: Yeah. I soft pedaled it. I didn't use the word "violently."

But let me ask you about that philosophy, if you will, with regard to percentage-of-revenue rates. Do you feel the same way about that, which is that the Copyright Owners have a right to be paid for their copyrighted material on a per-stream basis and that's all the regulators should do, and if the Copyright Owners and the Services want to meet in the marketplace and modify that in some way and go to any extent to a percentage-of-revenue rate, they are free to do that but it should not be imposed upon the Copyright Owners?

THE WITNESS: That's exactly right and that's actually happened, Judge. So if we're forced to accept just a percent of revenue, then if the Service chooses to give discounts, we're forced along into that choice too because the revenue will be based on the discounting.

If we're paid on a per-stream basis, which we think is more reflective of the inherent value of our property being used, then if there is

going to be discounting and we're not part of the decision-making, then we're not being asked to subsidize that decision-making.

And, for example, that's exactly what's happened in the marketplace already. It is not a theory. It has, in fact, happened. I believe that one of the Services here today offers family and student discounting and it is done completely with the agreement of the Copyright Owners through different direct terms separate from the compulsory terms that exist in Section 115. So it has been proven to work already.

JUDGE STRICKLER: So if we were to set a per-stream rate in our determination, we should not be surprised to see after the rate period begins in 2018 percentage-of-revenue deals voluntarily struck between the Copyright Owners and the Services?

THE WITNESS: I don't know whether the Copyright Owners would agree to percentage-of-revenue models in general. I know they generally don't like them.

I know that if there is a meeting of the minds between someone who actually owns and controls the copyrights and someone who wants to license them, they can agree to any term they want. And I'm

fine with that if it is by their agreement.

In the case of the one company here today who has done a direct deal for student and family discounts, it is worth noting that they offered rates that were above the statutory structure in order to get those concessions from the property owners. And so if that occurs in a marketplace, I welcome it.

I would not have a problem with any property owner who makes a decision for his or her property. What I object to is the government imposing those types of decisions on property owners under some theory that it is good for them.

I think that they are perfectly capable of deciding what is good for them, and if they think it is good for them, it will be licensed outside of a 115 structure.

JUDGE BARNETT: Mr. Israelite, how do you respond to the Services' position that offering these discount plans entices into a paid platform people who otherwise might not have a willingness or ability to pay for the going rate or, in the case of students, getting them in my words hooked on the service, so that when they grow up, they will buy the full price service? How do you respond to that

logic?

THE WITNESS: I will try not to take too much time because this is a topic I feel passionately about because we see it in other areas as well.

The theory of the Services is that they want to discount our property because it is good for us. Their argument is if we discount it, we will bring in more users who will get hooked and that will lead to them ultimately either paying when they were using it for free or paying a full service after they are no longer a student or potentially buying a family plan when they wouldn't have bought four separate plans, and that it was good for us.

JUDGE BARNETT: Or buying a service, period, when they were not otherwise willing to pay anything for music.

THE WITNESS: Sure. And --

JUDGE BARNETT: Which means there would have been zero for the Copyright Owners.

THE WITNESS: It is part of their argument of why it is good for us. It is because they are generating revenue for us that we should appreciate, that we wouldn't have otherwise gotten but for the discounting.

Whether that's true or not, I don't believe it is the appropriate place in a compulsory license to make that decision for us. If we think it is good for us, we're perfectly capable of allowing that activity to happen through a direct license.

That's exactly how Apple got licensed for these activities. And so --

MS. MAZZELLO: Your Honor, if we're going to name specifics, if we can go into restricted, please.

JUDGE BARNETT: Well, yes. And I'm not sure Mr. Israelite was even involved in the negotiations.

THE WITNESS: I was not.

JUDGE BARNETT: Okay.

MR. STEINTHAL: I was going to raise the foundational objection to that testimony.

JUDGE BARNETT: Okay. So I'm sorry I sparked your passion. We will just go back to having Mr. Zakarin ask the questions.

JUDGE STRICKLER: Less passion from you.

JUDGE FEDER: Actually I would like to ask a question.

You said just a moment ago that the

Spotify Free service has harmed songwriters. Can you explain what you mean by that? Are you talking about substitution that the Spotify Free service is substituting for other paid services or are you talking about some other notion of harm?

THE WITNESS: When the Subpart B-5 category was created, approximately ten years ago, it was a theoretical category. We now see the one company that is taking advantage of that category, which is Spotify, and their general argument to me personally and in general has been --

JUDGE STRICKLER: Is this going to be confidential?

THE WITNESS: I don't believe so.

JUDGE STRICKLER: You are talking about negotiations?

THE WITNESS: No, it is not about negotiations.

MR. MANCINI: If he said he is going to be discussing anything with Spotify, that would be restricted.

JUDGE STRICKLER: Sounds like it might be.

MR. ZAKARIN: This one is not my fault.

JUDGE STRICKLER: Not yet.

THE WITNESS: I can try to avoid maybe what would trigger this concern.

JUDGE FEDER: Just a second. Mr. Zakarin, are you going into restricted at any point?

MR. ZAKARIN: I am going to be going mostly back in history to 2008 and 2012, so I don't think I will be in restricted. I think that's past tense. So I wasn't planning on it, but I am the worst person to ask.

JUDGE FEDER: We can save this until the end of his testimony and then either have a brief restricted session or figure it out at that point.

MR. ZAKARIN: Or we're close to 5:00. If you want to do it now, we're here anyway. I don't want to cut off when it is fresh in your mind.

JUDGE BARNETT: Very wise decision.

JUDGE FEDER: Good point.

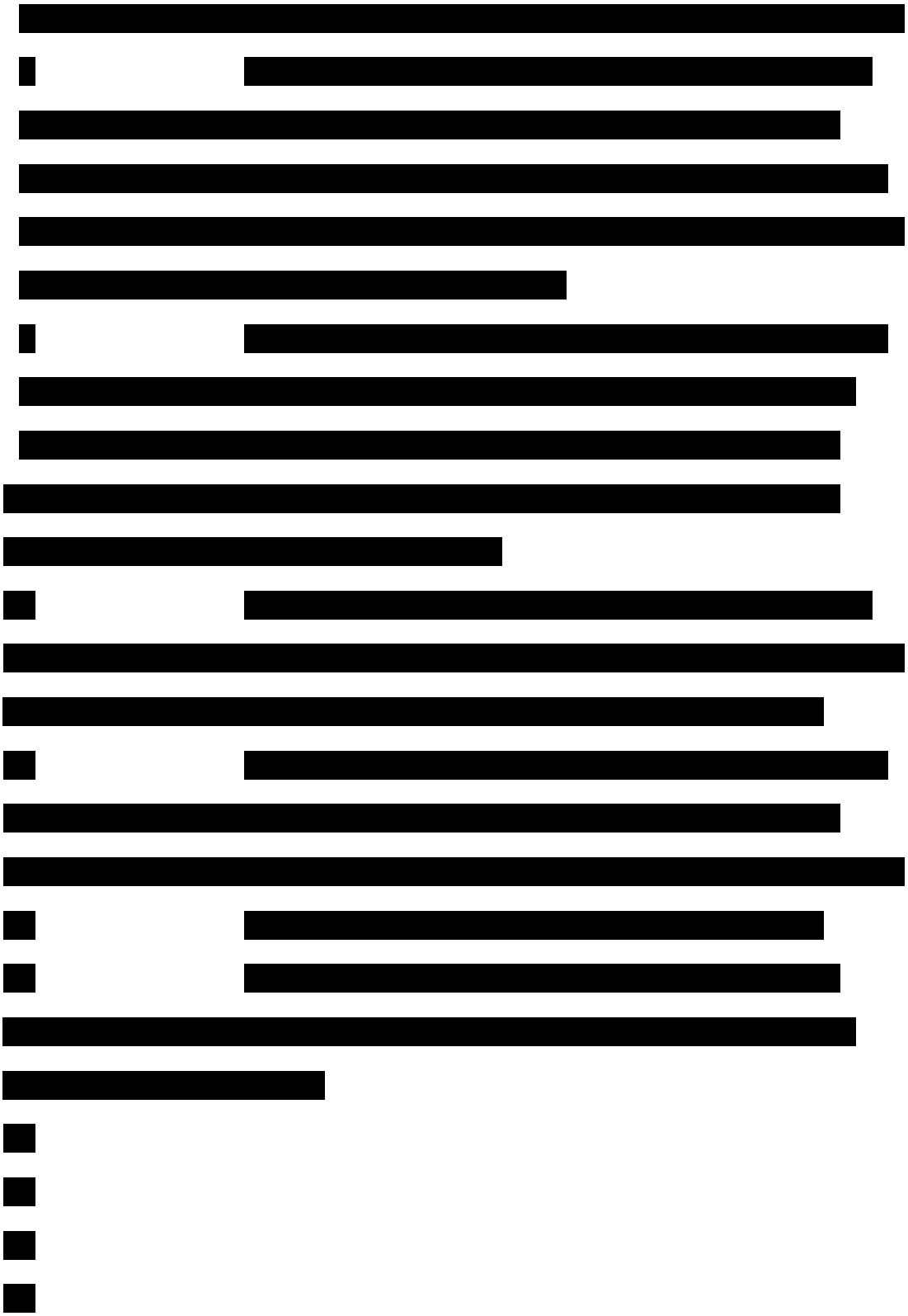
JUDGE BARNETT: At this point we will go into restricted session, and those of you who are not privy to restricted information, if you will please wait outside. We're going to adjourn at 5:00 o'clock or recess at 5:00 o'clock anyway, so I think that means you are free to go.

(Whereupon, the trial proceeded in confidential session.)

[redacted]

[redacted]

[redacted]



P R O C E E D I N G S

(9:15 a.m.)

JUDGE BARNETT: Good morning. Please be seated. Mr. Zakarin, we're continuing with Mr. Israelite this morning?

MR. ZAKARIN: We are. Thank you, Your Honor.

JUDGE BARNETT: You remain under oath, Mr. Israelite.

Whereupon--

DAVID ISRAELITE,

a witness, called for examination, having previously been duly sworn, was examined and testified further as follows:

DIRECT EXAMINATION -- RESUMED

BY MR. ZAKARIN:

Q. Doing this like a serial, where we left off yesterday was the 2008 and 2012 settlements.

JUDGE STRICKLER: Are we restricted or unrestricted?

MR. ZAKARIN: It's unrestricted at this point.

JUDGE BARNETT: I'm sorry. Ms. Whittle, we -- or, counsel, we've been handed up the promised excerpts of Exhibit 3040, and since this is

essentially different from what was originally marked as 3040, I think what we'll do is assign it a new number.

JUDGE STRICKLER: How about 3040-A, can we do that, because it's -- it's within it, right? Can you put a little A next to it? 3040-A?

THE CLERK: It will be Trial Exhibit 6012.

(Copyright Owners Exhibit 6012 was marked for identification.)

JUDGE BARNETT: 6012 for the record and for your records. Thank you.

MR. ISAKOFF: Can I ask if we've seen that -- that's the excerpt from Herring's deposition that was marked during Barry's testimony? Is that what that is?

JUDGE FEDER: Yes.

JUDGE BARNETT: Yes.

JUDGE FEDER: This is the excerpt from Herring's deposition.

MR. ISAKOFF: Have we seen what you've just handed up?

MR. HARRIS: I mean, I believe you've seen the deposition. I testified to the pages that were going in, and I'll represent to you that those

are the pages that are there.

JUDGE BARNETT: You will need to make copies for counsel, please.

MR. ISAKOFF: Normally, I would just expect to see it. Thank you.

JUDGE BARNETT: So by the next break, be sure everyone else gets it.

Now, back to you, Mr. Zakarin.

MR. ZAKARIN: All right. Okay.

BY MR. ZAKARIN:

Q. Mr. Israelite, were you personally involved in the 2008 and 2012 settlement discussions?

A. Yes, I was.

Q. Now, and I may have this slightly wrong, but the 2008 settlement set the rates and terms prospectively for the five-year period through, I guess, 2012; is that -- is that approximately correct?

A. Yes, I believe what we call Phono I started later than would normally be the schedule for the five-year block, and so we ended up approximately a little more than a year behind what the normal schedule would be.

Q. And did the settlement also set

mechanical rates for limited downloads or interactive streaming for the period preceding 2008, from 2001 to 2008?

A. Yes. There was a long period of time from really the inception of these business models until this settlement where many companies had operated under a rateless agreement, where the agreement was that when the CRB set the rate prospectively, that rate would be applied retroactively from inception of when those Services began business. And that was -- that was an agreement that -- before my time, that the NMPA entered into with several parties.

JUDGE STRICKLER: Were the retroactive payments, in fact, made?

THE WITNESS: There were two different categories. The first was with the RIAA representing record labels. And with that agreement, the RIAA made a advance, a lump-sum advance amount, and they never recouped against that amount. And so those were paid in full.

For the other Services that we would call the Digital Services that also entered into similar agreements, I don't believe that they ended up paying, and I don't believe that we ended up going

after them because I think it was such a small amount of money that we didn't think that it mattered.

JUDGE STRICKLER: So was it -- it was a small amount of money between 2001 and 2008?

THE WITNESS: For -- yes. Or --

JUDGE STRICKLER: For the streaming services?

THE WITNESS: Yes, or in some cases, I believe, there -- there was no money. I believe the companies took the license but then never actually used it or generated any revenue.

JUDGE STRICKLER: Okay, thank you.

BY MR. ZAKARIN:

Q. So if I understand correctly, other than the advances that you've talked about that came through the RIAA, were any other -- were any interactive streaming or limited download services, to the best of your knowledge, paying mechanical royalties prior to the 2008 settlement?

A. No. I don't believe so. I believe anyone who was operating prior to that settlement was operating under one of these rateless agreements with an agreement to apply the rate retroactively.

Q. Okay. So if any of the Services failed

or ceased to exist prior to 2008, I take it it was not because of the overwhelming burden of paying mechanical royalties?

A. They would have paid no royalties. So any service that operated between 2001 and the time of the settlement, which became effective, I believe, in 2009, if any company began and stopped, they had not paid any mechanical royalties, other than the RIAA, which had made this initial deposit but ended up not getting into that business, really.

Q. Okay. Ms. Levine of Google has testified here that she was involved in settlement discussions with respect to 2008 and/or 2012. Do you recall whether Ms. Levine was involved in any of the negotiations in which you participated?

A. I don't believe she was. My recollection is the only interaction I had with -- with Ms. Levine was in her capacity working for YouTube when we were involved in a litigation against YouTube, but I do not recall her having any role in the CRB.

Q. And Mr. Parness of Pandora also testified -- I believe it was about the 2008 settlement and his claimed involvement in some discussions.

Do you recall any negotiations in which Mr. Parness was a direct participant?

A. No, I do not. I do not recall interacting with him at all during that settlement discussion.

Q. I take it -- do you have any knowledge one way or the other as to whether perhaps behind the scenes they were working with DiMA?

A. I wouldn't know what -- what DiMA did with their own members behind the scenes, but we dealt primarily with the DiMA personnel. And I do recall some involvement of some of the company people, but not with -- with Mr. Parness or Ms. Levine.

JUDGE STRICKLER: Did -- di the representatives of DiMA tell you during the negotiations that, whatever was discussed for purposes of potential approval in the settlement, they had to take back to their members before they could go -- go ahead and either agree or disagree with the proposal?

THE WITNESS: That was assumed, as it was on my side as well with regard to my Board and my membership as well, although my recollection is that in the first settlement in 2008, the -- the CEO of

DiMA had quite a bit of influence with his members and spoke for them very strongly. And so there wasn't a sense that he wasn't empowered to negotiate. The sense was that he was very empowered to negotiate. And I don't recall him having to ever back-track on anything that he committed to during a negotiation.

JUDGE FEDER: Who was that, for the record?

THE WITNESS: John Potter was his name.

JUDGE STRICKLER: Just -- just so I'm clear, you -- you understood him to be empowered to negotiate, but you did also understand that he was empowered to get assent from his -- from his constituency before he could come back and -- and agree to particular terms?

THE WITNESS: Yes, Judge. I think that that was assumed on both side, that both of us would need final approval from our boards before we could -- could sign documents.

JUDGE STRICKLER: Thank you.

BY MR. ZAKARIN:

Q. I ask you to turn to Exhibit 3030, which is your rebuttal statement. And turn to paragraph 17, if you would.

And in paragraph 17 in the first sentence, you refer to a Mr. Quirk who testified in Phonorecords I, and your footnote references an exhibit. Do you see that?

A. I do.

Q. The footnote is footnote 15. Do you recall Mr. Quirk, his testimony in Phono I?

A. I don't have a specific memory of his entire testimony, but I -- I do recall reading his witness statement. And I have a general recollection of him being involved in that first proceeding, yes.

JUDGE STRICKLER: Counsel, just a question for you.

MR. ZAKARIN: Sure.

JUDGE STRICKLER: So the footnote is to Mr. Quirk's written direct statement --

MR. ZAKARIN: Yes.

JUDGE STRICKLER: -- in Phonorecords I. Has that been designated as prior testimony in this proceeding?

MR. ZAKARIN: It was referenced and we have it to offer it into evidence since it was a document that was referenced specifically in Mr. Israelite's testimony.

JUDGE STRICKLER: This I understand. I'm just asking the question as to whether it was designated.

MR. ZAKARIN: Hasn't -- has not been designated as prior testimony for that purpose, but it was identified in effect as an exhibit to his witness statement in that footnote.

JUDGE STRICKLER: Thank you.

BY MR. ZAKARIN:

Q. I ask you to look in your book for Exhibit 321. And I believe that -- I believe 321 corresponds to the document referenced in footnote 15. Can you identify Exhibit 321?

A. Yes. This appears to be the testimony of Mr. Quirk.

Q. Do you recall reading Mr. Quirk's written direct statement when it was submitted? I think it was probably submitted in redacted form as this one is, in -- I guess it was 2007 when it was submitted?

A. I honestly don't have a recollection of -- of reading this ten years ago, but I would have read it. I read all of the written submissions at that time. And so I would have read it at the time, but I don't have a specific recollection of -- of reading this testimony.

Q. Do you recall reading it in connection with the submission of your rebuttal testimony?

A. Yes, I do recall reading it for that purpose.

Q. Okay.

MR. ZAKARIN: I'm going to offer Exhibit 321.

MR. MARKS: We object. This is a back-door attempt to designate the testimony, and it wasn't -- it hasn't been properly designated in his testimony.

MR. STEINTHAL: We join in that.

MR. ZAKARIN: This was referenced specifically and identified specifically in his written statement. There is no surprise. There's no prejudice. It was -- it was known to them.

JUDGE BARNETT: What's the purpose of having it admitted?

MR. ZAKARIN: There's two purposes, Your Honor. And there's going to be another document as well, which is the testimony of Mr. Sheeran. It's being offered because there are statements -- a couple of statements in Mr. Quirk's testimony which -- which confirm testimony of the witness respecting the nature of the industry at the time.

With respect to Mr. Sheeran's statement, which I'll get to in a second, it identifies at least one of the proposals that were made by the NMPA back in -- I guess it was probably in 2007 or 2008 in the rate proceeding, and, in addition, it identifies what was being advanced by DiMA at the time.

And both of those statements are identified in the footnote -- or the footnotes to Mr. Israelite's testimony. Again, no surprise.

JUDGE BARNETT: Okay. We're going to be quiet for a minute. You don't need to keep talking to fill the space. Thank you.

MR. ZAKARIN: That's okay.

JUDGE STRICKLER: Counsel, while we're waiting, did you designate any other testimony, prior testimony?

MR. ZAKARIN: No.

JUDGE STRICKLER: In this proceeding at all?

MR. ZAKARIN: I don't believe so.

JUDGE STRICKLER: Thank you.

JUDGE BARNETT: Let's confer. Excuse us for a moment.

(Judges confer.)

JUDGE BARNETT: Please be seated.

MR. ZAKARIN: Your Honor, if I can, there's two facts that I want to give you in advance of your ruling. One is that it was attached as part of our exhibits. Number 2 is that it's designated as an Amazon exhibit and it's not objected to.

JUDGE BARNETT: Mr. Marks?

MR. MARKS: Yeah, I just wanted to address that. It just doesn't comply -- their attempt to introduce this doesn't comply with section 351.4(b)(2), which requires that if they're going to rely on the testimony of a witness in a prior proceeding, the complete testimony, including written, direct, et cetera, none of that has been offered to us, so we don't think it's appropriate here.

JUDGE BARNETT: Mr. Elkin, did your client designate this as an exhibit or as prior testimony or did you simply have it marked as an exhibit?

MR. ELKIN: It was marked as an exhibit.

JUDGE BARNETT: All right. The rule that you have cited, Mr. Marks, is correct. This clearly was not designated as prior testimony. We can look at it. We can take official notice. It's in our

records.

But whether we admit it in this case depends on our analysis of the hearsay exception and our rules, not the real rule. So if we deem it appropriate, notwithstanding its hearsay nature, we can admit it.

So, Mr. Zakarin, why would it be appropriate for us to admit it?

MR. ZAKARIN: Because, Your Honor, it -- there are statements -- and I could do it even refreshing the witness' recollection, to the extent it's necessary -- but there are statements in it which reflect an admission, if you will, by a participant, which was DiMA at the time, which was a participant here. And we've heard that the parties here were and are members of DiMA.

As to the state -- at least dealing with this particular exhibit -- as to the state of the industry at the time, there's two statements which we think are admissions and they're confirmatory as well of what we have said.

As to Mr. Sheeran -- we might as well deal with both statements now, rather than doing them piecemeal. As to Mr. Sheeran's statement, it says two things, and it comes in on the same basis,

which is, one, it does identify the proposal or proposals of the NMPA, which the witness can identify as well, and it also includes a proposal that sort of forms the underpinning, if you will, of the negotiations that led to the 2008 settlement.

And there's also a statement relative, again, to the nature or the status of the industry at the time, which we think constitutes an admission. Your Honors have heard testimony how the industry was -- everybody knew what it was, what it was going to be, et cetera. That's not the state of what those admissions are. They're not our statements; they are DiMA's statements.

JUDGE BARNETT: Okay.

MR. ZAKARIN: So for those two purposes, Your Honor.

JUDGE BARNETT: Okay. In order for us to get the full picture of the circumstances at that time, we think it is appropriate to admit this, but it has to be admitted or submitted in the way in which the rule requires, and that is if you want it -- as if it were designated. If you want to designate it, you have to -- and this is -- the rule is confusing here. It talks about designating prior testimony, and then further down in that section, it

says "the complete testimony, including direct, cross, and redirect," which implies transcript.

So rather than submit that to us, we would like you to share that with your opposing counsel, and opposing counsel can then have an opportunity to respond to cross-designate. And if there's something in there that makes you believe there was a different witness that might have contradicted this -- do you see where we're going? It's going to be kind of a -- a mini-trial on the papers with regard to these two witnesses that were not properly designated to begin with.

MR. MARKS: Thank you, Your Honor.

JUDGE BARNETT: Thank you. So for purposes of today, you may proceed with the examination. And then we will consider what we receive back from the Services.

MR. ZAKARIN: It will be -- it will be very quick, as I said, Your Honor. It's just for limited purposes only.

BY MR. ZAKARIN:

Q. Turn to Exhibit 321 and look at paragraph 6, if you would. And the first sentence in paragraph 6 states -- and this is in Mr. Quirk's statement -- "The market for digital music

subscription services is still new and constantly evolving."

Does that conform to what your understanding was of the industry at the time?

A. Yes.

Q. And I ask you to turn to paragraph 48. And in paragraph 48, the second sentence reads, "These investments" -- and it's referring back to the investments that RealNetworks had made in developing the technology, et cetera. "These investments are very risky, as subscription music services represent a new and unproven business model."

Again, does that conform -- conform to your understanding and knowledge of the industry at the time?

A. Yes.

Q. In paragraph 18 in footnote 16 of your written rebuttal statement, you refer to, and indeed you attached, the rebuttal statement of Dan Sheeran. I ask you to pull Exhibit 322 and ask if you can identify Exhibit 322?

A. Yes, this is the written rebuttal testimony of Dan Sheeran.

Q. And that was attached, I believe, as

Exhibit 168 to the rebuttal testimony that you submitted?

A. Yes.

Q. Did you -- do you recall reading Mr. Sheeran's rebuttal statement at or about the time it was submitted?

A. My answer is the same. I do not have a specific recollection of reading this ten years ago, but I would have read all of the written testimony, and I did review it for the purpose of my rebuttal statement.

Q. Okay. Turn to paragraph 13, if you would, of Mr. Sheeran's statement. And he describes here the Copyright Owners' proposal in the 2006 proceeding, which I think got done in 2008, and he describes the proposal for limited downloads. The Copyright Owners' proposal.

Do you recall -- looking at it in front of you, do you recall whether or not his description of the proposal conforms to what the proposal was?

A. Yes, I believe this is just restating what our direct case proposal was.

Q. Okay. And for limited downloads, does it accurately reflect that it was a three-tier proposal?

A. Yes.
Q. And the greater of three tiers?
A. The greatest of the three, correct.
Q. Okay. And the three tiers were, first, a percent of revenue, which was 15 percent. The second was one-third of -- we'll call it TCC, and the third was a -- a penny rate. Is that right?
A. A per-stream rate, yes.
Q. A per-stream. Well, it --
A. For -- a penny rate --
Q. This was a -- this was for limited downloads, so it would be a per --
A. It was a per-use rate, correct.
Q. Yes. Was there a similar proposal that the Copyright Owners put forth for interactive streaming?
A. Yes, there was.
Q. Do you recall what it was?
A. I don't recall the specific numbers. I believe they were slightly lower numbers, but they were the same structure as our proposal for limited downloads.
Q. The same three-tier structure?
A. Yes, the same greatest of three different tiers.

Q. Turn to paragraph 28, if you would. And it says here, referring back, "Second, as noted above, DiMA has included proposed minima. The point of the minima is to provide some protection for Copyright Owners without imposing unreasonable costs on digital music services or preventing services from expanding or entering into the marketplace. The proposed minima also recognize that business models are evolving and that both subscription and non-subscription offerings may develop more over the next five years."

Do you recall DiMA proposing a minima of some sort to protect the Copyright Owners?

A. I recall there being a minima in their proposal. I -- I don't recall what the specific proposal was.

Q. Now, the ultimate Subpart B that was embodied in the 2008 settlement ended up incorporating a tiered or a greater of structure, did it not?

A. Yes, it did.

Q. And it also included minima or floors; is that right?

A. Yes, it did.

Q. Okay. Do you recall from the

negotiations how the precise percentages, numbers, and various floors and minima were determined or how they came about?

A. My recollection is that the structure that we proposed in our direct case became very much the framework of the structure of the settlement. We ended up with a -- five different categories of what we called the Subpart B, and each of them had a greater of formula, each of them slightly different.

And the specific numbers that were included in the settlement, my recollection is that it was a process involving back and forth with some sense of both sides being able to agree on the specific numbers, but it wasn't -- I don't recall there being any formula to get to those numbers.

Q. Do you recall how the minima that was included or the various minima that were included came about? Do you have any recollection of the specifics of that?

A. Yes. It was a subject of quite a bit of -- of negotiation over how to structure it, but what we ended up with was similar to our proposal, a three-tiered system with us having the advantage of having the greater of three different tests. One of those tests was a percent of revenue. One of those

tests involved some total amount or some percentage of what the record labels were paid. And then for some of the categories, a third test was a mechanical-only total amount. And that we then would get the benefit of whichever of the three tests provided the highest number.

Q. Do you recall any -- during the discussion -- do you recall any discussion during negotiations about the possibility that one or another of the minima might bind?

A. Well, I -- I don't even think we thought of them as minima. We thought of them as alternate rates. And we would get the greatest of three different rates.

And we had no idea, of course, because there was such little activity in the space that we didn't have a lot of empirical evidence to test it against. So I think our belief was that any of those might have kicked in.

Some of the factors were beyond our control, such as pricing models, which we had nothing to say about, such as how much the performance payment would be, which we had nothing to say about.

And so our assumption was that any of the

three might kick in, depending on how the business developed.

Q. Now the Services, other than Apple, have argued here that the 2008 and/or 2012 settlements are appropriate benchmarks for setting rates in this proceeding.

Let me -- let me ask you, during the 2008 negotiations, the actual negotiations, do you recall whether there was any discussion about the 801(b) factors in terms of your negotiations?

MR. STEINTHAL: I'm going to object to the characterization of the Services' position. I have no problem with everything that comes after in the form of a question, but the characterization of the record, I think, the record speaks for itself.

JUDGE BARNETT: Sustained. Would you rephrase the question?

MR. ZAKARIN: I will rephrase the question.

JUDGE BARNETT: Thank you.

BY MR. ZAKARIN:

Q. Do you recall during the 2008 negotiation any discussion of the 801(b) factors playing a role in the settlement?

A. No, I don't recall those being discussed

as part of the settlement.

Q. Do you recall -- and we covered some of this yesterday -- do you recall any discussion about whether the settlement could be used as a future benchmark or precedent?

A. Yes. My recollection is that, in addition to the statutory language about new trial being de novo, we agreed in our settlement language a restriction that it would not be precedential.

JUDGE STRICKLER: When you say in your settlement language, you mean in your written signed settlement document?

THE WITNESS: Yes, Judge.

JUDGE STRICKLER: Do you know whether that's record evidence in this proceeding?

MR. ZAKARIN: It is not, Your Honor. When you raised the question yesterday, I did pull the 2008 -- what's known as a wraparound agreement or wrap agreement. And -- from 2008.

I don't have the 2012, which may have different language. But the 2008 does have language. I'm prepared -- I think Mr. Steinthal is aware of it -- I'm prepared to provide it to the Court, but we haven't designated it. And so I'm reluctant to hand it up at this point because it

wasn't designated, but I did pull it in response to your question yesterday.

JUDGE BARNETT: Mr. Isakoff?

MR. ISAKOFF: I think we would object on the best evidence rule.

JUDGE FEDER: Can you use your microphone, please?

MR. MARKS: We don't have one.

MR. ISAKOFF: I wish we had one, but I'll -- I'll just speak louder.

JUDGE FEDER: Project.

MR. ISAKOFF: I'll object on grounds that this violates the best evidence rule.

JUDGE STRICKLER: Well, beyond that, it's not -- it's not -- well, you're talking about the testimony, I suppose, is what you're objecting to?

MR. ISAKOFF: That's correct, Your Honor. He's testifying to the contents of a ten-year-old document that has not been designated as an exhibit from memory; specific terms and language that could be germane.

JUDGE STRICKLER: Did you want to respond to counsel's suggestion that he was going to try to introduce the document now?

MR. ISAKOFF: It's a brand-new suggestion

to us that exhibits will be designated at this point in the proceeding.

MR. ZAKARIN: Let me respond to that, if I can, and in two ways. Number 1, I'm trying to address Mr. Isakoff's concern about the best evidence rule, although I think it was an objection I raised earlier with respect to testimony and the evidence came in orally anyway.

The second point is there have been additional exhibits that have been designated during this trial continuously, so I don't actually think that this is completely out of left field. I'm offering it, essentially, to respond to a question that Judge Strickler raised yesterday. If the Services don't want me to put it in, although, you know, I'm sure that they have it, I know Mr. Steinthal, as I said, questioned Mr. Israelite about the existence of the agreement at his deposition.

JUDGE STRICKLER: Well, don't make me the beard for your argument because I'm asking whether this document exists and was in evidence. I wasn't saying -- merely because I asked the question doesn't mean that I'm therefore suggesting that the document either is in evidence or can be put in

evidence at this point in time. That's an issue to be determined.

MR. ZAKARIN: I'm not attributing it to you. I'm just -- you were my prompt, but it certainly doesn't place it on you. It places it on me.

JUDGE BARNETT: I think the exhibits that we've continued to designate during this hearing have been rebuttal or impeachment documents. But, at any rate, Mr. Isakoff, did you have -- do you want the last word?

MR. ISAKOFF: Well, I think that if we're going to go to this first settlement, we certainly need to see both documents at once and then we can make a judgment on the second settlement.

JUDGE BARNETT: Okay.

MR. ISAKOFF: And the language that counsel is referring to with respect to any precedential use.

JUDGE BARNETT: Thank you. Mr. Zakarin, if you and your crew can provide copies of both settlement agreements to opposing counsel, then you can -- we'll leave open your examination long enough to resolve the issue of the admissibility of either or both of those settlement agreements.

MR. ZAKARIN: I'll pass on that, then, until later and we'll come back to it.

JUDGE BARNETT: Thank you.

JUDGE STRICKLER: Now that we're done with that, I just have two questions for the witness or two topics that come out of the documents, Mr. Zakarin, that you've just wanted to move into evidence.

The first one is Exhibit 321, sir, that you have in front of you, which is the testimony back in 2008 of --

MR. ZAKARIN: Mr. Quirk.

JUDGE STRICKLER: Mr. Quirk, thank you. In paragraph 57 of Mr. Quirk's testimony -- it's on page 30, sir. Let me know when you are there.

THE WITNESS: I have it.

JUDGE STRICKLER: Thank you. Mr. Quirk says or writes, "We have seen that there is price for our service above which consumers are not willing to pay. As it is now, we are all but handcuffed in our ability to price creatively to attract subscribers. There is the very real risk that if the rate that is set for this proceeding does not reflect this restriction on our business, we will be severely harmed. We must be able to

retain the flexibility in our business model and our pricing structure in order to be successful and continue to offer a legal way for consumers to fully explore the world of digital music."

Do you see that?

THE WITNESS: I do.

JUDGE STRICKLER: Is that a point that the -- that DiMA and the Services were making during those settlement discussions? I'm not asking you to agree with it. I'm asking whether or not they were making the point.

THE WITNESS: Well, they were certainly making an argument to pay less. That was consistent throughout the negotiations.

JUDGE STRICKLER: That's not my --

THE WITNESS: In terms of --

JUDGE STRICKLER: That's not my question. My question is pretty tailored. It's to paragraph 57.

Did they make that point during the negotiations?

THE WITNESS: I'm sorry, Judge. I took two points from paragraph 57. The first sentence, I took as a point about total cost. The second point about flexibility was also something that was

clearly part of our settlement negotiation, which is why we ended up with a tiered structure that -- that had different price evaluations in each of the different tiers.

But that was clearly something that the Services were concerned about, was with both total cost and with flexibility of how they would price. I think we were --

JUDGE STRICKLER: Well, I'm not interested in the moment. I'm very interested generally as to your position, but I'm just -- right now I'm asking only about what they expressed to you.

THE WITNESS: I think it's absolutely fair to say that at the time they expressed a desire for flexibility in their pricing.

JUDGE STRICKLER: And now turning to the other exhibit that counsel showed you, that's the very next one in your book, sir, the written rebuttal testimony of Dan Sheeran. And it's page 8, paragraph 20.

Let me know, sir, when you're there.

THE WITNESS: Okay.

JUDGE STRICKLER: Okay? The paragraph talks about the performance right and the royalties

paid. The last sentence in that paragraph 20 -- in that last sentence, Mr. Sheeran testifies, "The fair price for all copies made to facilitate streaming is zero because the Copyright Owners are fully compensated for this activity through the royalties paid to the performance rights organizations."

Do you see that testimony by Mr. Sheeran?

THE WITNESS: Yes. May I read the full paragraph?

JUDGE STRICKLER: Absolutely, sure.

THE WITNESS: Yes.

JUDGE STRICKLER: Is -- is the part that I -- that I read, the quote, is that yet another thing that the -- that DiMA and the Services were advocating in their negotiations with you?

THE WITNESS: It was prior to their settlement. And then in the settlement, they abandoned that position. In addition, several of the DiMA members had -- prior to this proceeding, had contractually already conceded this point to us. And I don't recall whether Real was one of them or not.

JUDGE STRICKLER: Was the concession that they made that was embodied in the 2008 settlement the all-in concept of the rate?

THE WITNESS: The concession was that there was a mechanical payment due for the activity.

JUDGE STRICKLER: And was an additional part of the concession that was embodied in the 2008 settlement, the incorporation of an all-in rate?

THE WITNESS: The all-in rate was a component that they asked for so that they would have some sense of price certainty when combining the two different rights. But, of course, that only consisted in some of the parts of the three-tiered system, and so depending on which of the categories, it may affect them or it may not.

JUDGE FEDER: For clarity, which activity?

THE WITNESS: For the -- any of the activity for the Subpart B five categories of settlement.

JUDGE FEDER: Thank you.

JUDGE STRICKLER: Thank you, Mr. Israelite.

BY MR. ZAKARIN:

Q. Do you recall approximately when the 2008 settlement was embodied in regulations issued by the CRB?

A. My memory is that it -- it happened maybe

in early 2009, but I don't recall exactly when it became effective.

Q. Let's turn to Phonorecords II.

JUDGE STRICKLER: Just --

MR. ZAKARIN: I'm sorry.

JUDGE STRICKLER: Just before you do, I just want to get a clarification. I know we have --we have an outstanding evidentiary issue that relates to the settlement agreement itself. Your testimony is that the settlement agreement has language in it that goes beyond the regulations for -- of Phonorecords I, as we know and we can certainly take official notice of what the regulations say, that they say that future rates will be set under Subpart B de novo, and Subpart -- there was no Subpart C back then. Subpart B de novo. And you say, as I -- as i just recounted, that there was other language in the settlement agreement with regard to perhaps the precedential value of further use of the settlement -- settlement rates.

Whatever that other language was, it was not incorporated into the regulations themselves. I think we're not in dispute about that. Do you know why that's the case?

THE WITNESS: No, I don't know why the language that we agreed to in our settlement agreement, if it didn't make it into the actual regulation, I don't know why that was the case. I wasn't serving as an attorney, obviously, in this proceeding. And -- and I don't know why it wouldn't have made it from the agreement itself into the regulation.

JUDGE STRICKLER: Thank you.

BY MR. ZAKARIN:

Q. Do you recall when the CRB called for participation in Phono II, approximately?

A. I believe it was in the beginning of 2011.

Q. So that was roughly two years after the settlement, in effect, was adopted?

A. Yes. I recall that, because of the lateness of Phono I and then the Phono II staying on schedule, there was a very short window between the effective settlement taking place and the beginning of what was then Phono II.

Q. Do you have a recollection of the costs in Phonorecords -- Phonorecords I for the NMPA?

JUDGE STRICKLER: By costs, do you mean legal costs?

MR. ZAKARIN: Legal costs. The overall cost of the proceeding. I wish it were only the legal costs.

THE WITNESS: I do. Obviously, this was a new thing when the CRB was created. We had lived under -- I believe it had been 20 years of settled rates prior to that trial of Phono I.

I don't think there had been a trial since 1980. And so I, obviously, had no experience with -- with the cost of going to a rate proceeding, but in Phono I, I believe NMPA spent somewhere between 15 and 20 million dollars.

MR. ZAKARIN:

Q. How did that compare to the NMPA's budget?

A. I recall thinking that the trial itself was costing approximately two years of my total budget.

JUDGE STRICKLER: Were there any special assessments made on the members to cover those costs?

THE WITNESS: I believe in -- what happened for Phono I is that we achieved a very large settlement with Bertelsmann, which had purchased Napster. And I believe that my membership

diverted some of the settlement money that otherwise would have gone into their pockets toward the payment of the bill for Phono I.

JUDGE STRICKLER: The whole of it or part of it? If you recall.

THE WITNESS: My recollection is -- well, it wasn't the whole of the settlement. I think it remains today as the largest copyright judgment or settlement in history, but it was part of it.

JUDGE STRICKLER: Thank you.

BY MR. ZAKARIN:

Q. In Phono II, was there any of the litigation activity that occurred in Phono I?

A. No. In Phono II, we were able to avoid almost all of the things that cost us in terms of expert and legal fees.

Q. Was the NMPA in a position in 2011, 2012, to afford another full-blown litigation on the scale of Phono I?

A. No. We were -- I was determined to not let that be something that the other side would know or see. So we certainly didn't talk about our challenge of having to fund another rate proceeding, but, privately, I don't know how we could have afforded to go to trial two years later after

finishing Phono I with the financial position that we were in.

JUDGE FEDER: Do your members weigh in on that?

THE WITNESS: Absolutely. My members -- I have a Board of Directors made up of 18 publishers, but they include all of the larger publishers. And so my Board -- even though there are hundreds and hundreds of publishers that are members, my Board represents a very large percent of the marketplace because of their size.

And so these -- these conversations and decisions with my Board very much represent a large chunk of the total industry. And they were very concerned about going to trial again in Phono II.

BY MR. ZAKARIN:

Q. And Phono II settled in or around April of 2012; is that right?

A. I remember early 2012. I don't recall the month.

Q. Okay. Between the CRB's announcement in January of 2011 and the settlement, do you recall the focus of the discussions that led to the settlement?

A. Oh, yes. The second trial was starting

very quickly after the first. Our view was that almost nothing had changed in the marketplace. Our views about the -- the streaming services were basically the same as they were from the first proceeding.

And there had not yet been significant movement in the marketplace with regard to the Subpart A categories, with regard to their importance. And so it felt almost as if we were in the exact same position starting Phono II that we were in when we settled Phono I.

Q. Was there any particular service or categories of service that -- as had been in 2008, that were the focus of the discussions that you had with your counterparts on the other side? And --

A. Yes.

Q. I'm sorry, go ahead.

A. So the settlement discussions in Phono II involved DiMA again and the RIAA again. And both the RIAA and DiMA were interested in adding categories to Section 115.

I think our view was that it was somewhat of a fool's errand because history had taught us that they didn't really know what was going to happen in the marketplace and that any opinions they

had about what might be important often turned out not to be true.

And that was particularly true with the record labels. My experience was. Not just from 115 but also from larger business discussions with them about what was important to them. And so they did come with an interest in adding categories. And I believe our view was that we were open to discussing that, but we didn't think they could accurately predict what might be important.

MR. STEINTHAL: I'm going to object and move to strike the testimony about what the labels' perspectives were and even what the Services' perspectives were. This witness has no basis or foundation to testify to that.

JUDGE BARNETT: Sustained. He can testify to the fact that they requested these, but not to their motivations.

BY MR. ZAKARIN:

Q. Can you tell -- can you identify what, as you recall it, the services that they were focused on in the discussions in adding, or the categories of services?

A. Yes, they ended up being the categories that were added in Subpart C and some other

categories that ended up not being added to Subpart C because we couldn't agree, but there was a view that there might be an appetite for a limited service that only offered some narrow catalogue of music as opposed to a full library of music, and so that was one category that they cared about.

There was still a thought that ownership models would prosper, if they could figure out more ways to access the ownership models. And so the locker categories became something that was important because they thought it might help extend the life of the -- the ownership models and the download models. And so that was a category.

And then there was lots of discussion about how things were bundled together. And while there was one bundled category in the Subpart B rates, there was an interest in adding a different type of bundle in the Subpart C. But it was basically the categories that ended up being embodied in the Subpart C.

Q. Do you recall any extensive negotiations --

A. I'm sorry. There was one --

Q. That's all right.

A. There was one category that specifically

they asked for that didn't make it into the Subpart C, and that had to do with a free locker as opposed to a paid locker. And that was a category that Google wanted that we were not able to agree to in the Subpart C.

JUDGE STRICKLER: Why did you refuse to agree to that?

THE WITNESS: I believe our concern about the free locker was the same as what our concern is today about the free service, which is that we weren't interested in codifying a service that was being given away without us understanding more of the economics or how it might be good for us.

BY MR. ZAKARIN:

Q. Do you recall any extensive negotiations over anything that had been agreed to and incorporated in the 2008 settlement that was in Subpart B?

A. Yes. In the Subpart C categories, we were also discussing this element of what we called TCC, or total content cost. The theory for the publishers was that the record labels were in a free market, and unfortunately we, the songwriters and publishers, were bound by statutory rates, and that if there were some way for us to tie into what the

labels might be able to achieve in a marketplace, that could be good for us.

And so the TCC element, which was present in Subpart B, was also something that we wanted in Subpart C. Even though not much had changed over the two years, one of the things that I think we had some reflection on was how we defined the total content cost.

And we were interested in strengthening the language from the Subpart B into the TCC definitions in Subpart C. And we also wanted to include that improved language back into the Subpart B. And so I recall that being a topic of opening up the older settlement.

Q. Do you recall whether there was any discussion about changing the percentages or rates that were in Subpart B?

A. I'm sure we wanted higher rates. And I don't recall specifically what we proposed, but we ended up not changing the financial terms in Subpart B.

Q. There are a number of language changes that do exist in the -- in -- in the section of the regs under the 2012 settlement.

Were you involved at all in the sort of

language changes of the -- of the regulations?

A. I would have been involved on a policy level but not in a wordsmithing level or drafting level.

Q. Okay. Now, I want to turn -- and this is sort of, I think, the final section -- to the argument that's advanced here regarding public performance market and the fragmentation and fractional licensing.

And you address this in paragraphs 55 through 66 of your rebuttal statement. You address the Services' argument about fragmentation of the public performance market.

Can you summarize for the Judges, without having to go through all of those paragraphs, which are in evidence already, your response to the arguments about the fragmentation of the public performance market?

A. Sure. I would start by saying that I don't think it's relevant. I don't think it matters. I don't think that how public performances are licensed has any relevance into what the proper valuation is of our intellectual property for a mechanical reproduction in this proceeding.

That being said, to the extent someone

else thinks it's relevant, I don't think there's fragmentation in the performance market at all. The performance market has evolved on its own without any direction really from government to where there are four performance rights organizations, or PROs, that act as collectives.

And if a licensee takes the license from the four PROs, then I believe in the history of the country there has never been a licensee that has been sued for infringement for having those blanket licenses from each of the four.

Two of the largest, ASCAP and BMI, are regulated by consent decree. There is debate among the PROs over what percent of the market ASCAP and BMI make up. I think there's general agreement that it's somewhere between 80 to low 90 percentile of the market. And with ASCAP and BMI, because they are forced to live under consent decrees that have been in place since 1941, they can't say no to a request for their license.

So if a licensee asks for the ASCAP or BMI license, you're licensed automatically. And it's just a question of setting a rate. And if you can't agree on a rate, you end up in front of a single federal judge in the Southern District of New

York.

So for a licensee, for a large majority of the market, you simply have to ask ASCAP and BMI and you're then licensed. For the other two PROs, SESAC and GMR, which is a newer one, much smaller percent of the market, obviously, they're not bound by consent decrees, but the process for getting their license is also very simple. You negotiate a license for the blanket that they give for what they represent.

And if you get the four licenses, you're completely licensed. If SESAC or GMR were to deny a license, it's their right to do that. Our performance right is not regulated by law. It is a free market right. And if an owner of a copyright or their representative doesn't want to license it, they're free to do that, although SESAC and GMR are in the business of licensing and collecting money. So you don't find the circumstance often of where licenses are denied. It just doesn't happen.

MR. STEINTHAL: I have to object to the part of the testimony, again, that is so beyond his foundation, in particular, the testimony that the process is simple in getting licenses from GMR and SESAC. He has no foundation for so stating. I wish

it was true, but he has no foundation for that.

JUDGE BARNETT: Thank you. We don't need a narrative. Just identify the issue. Thank you, Mr. Steinthal.

MR. ZAKARIN: The witness certainly does have a foundation. He has been heavily involved in all of the proceedings relating to the PROs and all of the submissions to the Department of Justice, all of the submissions that went into the -- the federal courts. He is aware of the licensing procedures of GMR. Those are his members that have rights with GMR and with SESAC.

JUDGE BARNETT: Has this witness ever filed an NOI or sought a license or represented a songwriter or a performer who obtained a license from BMI or SESAC or --

MR. ZAKARIN: Those aren't done by --

JUDGE BARNETT: -- or ASCAP?

MR. ZAKARIN: Those are not done by NOI, in any event. They're automatically licensed by ASCAP and BMI.

JUDGE BARNETT: Sorry, my mistake.

MR. ZAKARIN: I know. SESAC and GMR are, you make a request for a license, and then you negotiate, and, indeed, there, I think,

Mr. Steinthal is well familiar with it.

MR. STEINTHAL: I am.

MR. ZAKARIN: Yes, you are. And so is the witness.

MR. STEINTHAL: And he is not. I just went through a two-week trial against SESAC.

JUDGE BARNETT: Okay. All right. Okay.

MR. STEINTHAL: That is not a process --

JUDGE BARNETT: Okay, we're on a tangent. We're on a tangent.

MR. ZAKARIN: We are.

JUDGE BARNETT: Okay? The objection is overruled.

BY MR. ZAKARIN:

Q. Let me turn to fractional licensing. Can you -- maybe it's useful to have a little framework. What is fractional licensing?

A. Fractional licensing is the concept that -- that copyrights, and in particular, in the music space, are often owned by multiple parties. If a copyright makes up a 100 percent whole, very often a song is written by more than one songwriter and you also may have publishers that have some ownership interest. So different parties own different fractions of that one song.

And the way that you license your -- your copyright is traditionally done through you license the fraction that you control. And so that is what fractional licensing is.

JUDGE STRICKLER: Your -- your testimony about fractional licensing, both now and in your written rebuttal testimony, is in response to Dr. Katz, the economist who appeared on behalf of Pandora, I believe, correct?

THE WITNESS: Quite honestly, I don't know why I was asked to comment on fractional licensing.

JUDGE STRICKLER: You mentioned Dr. Katz by name --

THE WITNESS: Yes.

JUDGE STRICKLER: -- in your written rebuttal testimony.

THE WITNESS: Yes, but I don't -- so I assumed it was -- it was for that purpose, but I don't know what other purposes there would be for it to be relevant.

JUDGE STRICKLER: Did you -- did you review Dr. Katz's written testimony or his -- and/or his -- his oral testimony here?

THE WITNESS: Not his oral testimony. I

did read his written testimony at some point.

JUDGE STRICKLER: Did you review his economic rationale -- I understand you're not testifying as an economist. Did you -- did you review his economic rationale for why he thought fractional licensing was detrimental?

THE WITNESS: I don't recall reading beyond his written statement. And I guess you're not asking me my opinion about his view, but I don't recall reading beyond his written statement.

JUDGE STRICKLER: Okay. So you're not -- you're not testifying to respond to any of the economic arguments that he made in his -- in his testimony as it relates to fractional licensing? You're here -- your testimony covers the legal aspects and the factual -- excuse me, the factual aspects of how fractional licensing has developed and exists in the context of the -- of the four -- four PROs that now exist?

THE WITNESS: Well, I think it's -- it's beyond that. I think there is a legal aspect to this, which -- which I --

JUDGE STRICKLER: Well, you can talk about, but it's not -- you're only testifying to it because we're not eliciting legal conclusions from

you; we're getting facts from you.

THE WITNESS: No, and they wouldn't be my legal conclusions. They would be the legal conclusions of the Copyright Office, which I'm well familiar with.

I'm also familiar with the legal decisions of the judge that oversees the BMI consent decree who has made a ruling on this, but it wouldn't be my legal opinions.

JUDGE STRICKLER: I appreciate that you're pointing us -- pointing our attention to those opinions. So thank you for that.

MR. ZAKARIN: I think what I'll do, just to cap that.

BY MR. ZAKARIN:

Q. I will ask you to turn to Exhibit 327, which is also an Amazon-designated exhibit. And I ask you if you can identify the document, which actually is probably two combined documents. It's two letters and then a report. Do you have that in front of you?

A. Yes.

Q. And can you identify what it is? As I said, there's three -- there's three combined documents, actually.

A. Yes. This is a letter from Congressman Doug Collins, who is the -- a member of the House Judiciary Committee to the then Register, Maria Pollante, asking her opinion about this topic. It is then the Register's letter in response, along with a, I guess you would call it, a paper that lays out the Copyright Office's position on the questions that were asked by the Congressman.

Q. Relating to fractional licensing in the public -- in the performance market, among other things?

A. Yes.

MR. ZAKARIN: I offer Exhibit 327, Your Honors.

MR. STEINTHAL: I object to it. It is what it is. If it's not offered for the truth of the matter, I suppose it can come in.

MR. ZAKARIN: I'm not going to argue that the Register of Copyrights was not telling the truth when she submitted a report to Congress.

MR. STEINTHAL: I'm not saying it is or isn't. I know that the Justice Department actually disagreed with the position of the Copyright Office in a very long report after a two-year investigation.

MR. ZAKARIN: Actually, we can argue about what the Justice Department actually believed without --

JUDGE BARNETT: Let's not.

MR. ZAKARIN: I was going to say that we're not going to.

JUDGE BARNETT: So did Mr. Israelite cite this report in his written direct -- written direct or rebuttal testimony?

MR. ZAKARIN: I believe that he did, Your Honor. Let me -- give me a second.

JUDGE STRICKLER: Is it footnote 60 or 65?

MR. ZAKARIN: It sounds -- it sounds about right anyway. Let me look.

JUDGE STRICKLER: Page 25. Thank you.

MR. ZAKARIN: Yes, and it -- it was a document that was even attached to his -- you're way ahead of me, Your Honor.

JUDGE STRICKLER: Well, I guess --

MR. ZAKARIN: It's a low --

JUDGE STRICKLER: -- a broken -- a stopped clock is right twice a day, you know?

MR. ZAKARIN: It's a low bar, but you're away ahead of me. It is --

JUDGE STRICKLER: We can both contest self-deprecation.

MR. ZAKARIN: 173, Your Honor. It was attached to the compendium of exhibits. And it is, again, as I note -- and it was designated by Amazon as an exhibit.

JUDGE BARNETT: Not that that overcomes any objection, just because it was designated by another party. 327 is admitted. It's public. It's for whatever weight it might have or influence.

(Amazon Exhibit Number 327 was marked and received into evidence.)

MR. ZAKARIN: I have no further questions, Your Honor.

JUDGE BARNETT: Okay. Thank you. Just so everyone is clear, what's happening with the designated/undesignated testimony, the Copyright Owners are to produce full transcripts for both of those witnesses by noon on Friday. The Services are to file their responses by the close of business on the 14th of April. Isn't that our last day? Aren't we going until the 13th?

JUDGE STRICKLER: No, because next week -- what's the last day on the schedule?

MR. ZAKARIN: 13th, I believe.

JUDGE STRICKLER: Which is a Wednesday?
MR. ZAKARIN: I think it's a --
JUDGE BARNETT: It's a Thursday.
MR. ZAKARIN: I think it's a Thursday. I think Monday and Tuesday, which is the 10th and 11th, we're off, and 12th and 13th we're on.
JUDGE FEDER: 13th is a Thursday.
JUDGE STRICKLER: Right.
MR. ZAKARIN: Your Honor, if I can, on the transcripts, I don't know that we have access to the transcripts from -- the trial transcripts from the hearing.
JUDGE STRICKLER: What -- we're talking about Phonorecords 1, right?
MR. ZAKARIN: Yes.
JUDGE STRICKLER: Was there a trial on Subpart B or did it settle out?
MR. ZAKARIN: It settled out, I think, but after --
JUDGE BARNETT: After the trial.
MR. ZAKARIN: -- a considerable part of the trial. But we don't have access to the trial transcripts themselves.
JUDGE STRICKLER: And you didn't cite to the trial --

JUDGE BARNETT: Your client must.
MR. ZAKARIN: No, we did not. And we did offer the full witness statements.
JUDGE BARNETT: Okay. Does your client have access to those transcripts?
MR. ZAKARIN: I tend to doubt it.
JUDGE BARNETT: They spent 15 million dollars. They should have a transcript.
(Laughter)
MR. ZAKARIN: Your Honor, it would have been 20, but they didn't get the transcripts.
JUDGE BARNETT: I see. Very well. Produce what you can get by noon this Friday. And then, Mr. Isakoff?
MR. ISAKOFF: Yes. Then there's the matter of the best evidence rule issue with the settlement agreements themselves that was the subject of a fair amount of colloquy, even after the objection was made. And we're hoping to get those agreements before the cross.
MR. ZAKARIN: Well, I have -- I have the 2008. I'm sure that Mr. Steinthal has 2012.
MR. ISAKOFF: Well, perhaps if we can agree on what the 2012 document is, then my problem is solved, but I would object to proceeding with

just one of the two documents because I believe that they're different materially.

JUDGE BARNETT: After our recess, you can let me know who won the fist fight during the break.

MR. ZAKARIN: I can tell you now.

(Laughter)

JUDGE BARNETT: Pardon me?

MR. ZAKARIN: I can tell you now.

MR. ISAKOFF: He's a very tough guy. We established that.

JUDGE STRICKLER: Your only objection is a best evidence objection?

MR. ISAKOFF: It is a best evidence objection.

JUDGE STRICKLER: Your only -- no. Your only objection is a best evidence objection?

MR. ISAKOFF: And also completeness. If we're going to be talking about the settlement agreement for Phono I on this issue of what's precedent and what's not, then we must have the settlement agreement for Phono II on the same issue, because I believe they may be quite different.

MR. ZAKARIN: I suspect they are, but I don't have an issue with that.

JUDGE BARNETT: All right. You will let

me know at the end of the recess where we are on the settlement agreement production.

I misspoke. The responses to these other designated written direct testimony will be due on the -- by the close of business on the 7th, which is the Friday after they're produced.

Also, during our -- two housekeeping matters. There are mics on stands. One is hiding behind a pillar here, and one is over at the end of that desk. They should be nearer the tables that are missing desk-mounted microphones. So during the break, we'll try to get those so that you'll have access to those. You can always do your best Phil Donahue with those. Nobody in the room even knows who Phil Donahue is.

MR. ZAKARIN: I know. I know.

JUDGE BARNETT: Secondly, we did get, during this session this morning, we did get a computer alert that there is an emergency situation involving police, and everyone in the building is directed to avoid Independence Avenue and First Street Southeast until further notice.

So if during the break you were planning to go outside the building, don't. Okay?

We'll be at recess for 15 minutes.

(A recess was taken at 10:30 a.m., after which the hearing resumed at 10:52 a.m.)

JUDGE BARNETT: Please be seated. Is anyone going to cross-examine Mr. Israelite?

MR. ELKIN: I would like to start if I could, Your Honor.

JUDGE BARNETT: You may, Mr. Elkin.

MR. STEINTHAL: Let me first advise the panel that we've had a brief discussion about the documents, the agreements, and we're going to proceed with the cross and then see where we are after that and see if we need to reach a resolution.

JUDGE BARNETT: Makes sense. Thank you.

MR. ELKIN: Good morning, panel.

CROSS-EXAMINATION

BY MR. ELKIN:

Q. Good morning, Mr. Israelite.

A. Good morning.

MR. ELKIN: Just a couple of housekeeping items, if I can. First, panel, we're going to begin in an open session. Then we'll have a discrete portion in restricted, and then we'll finish in an open session.

JUDGE BARNETT: Thank you.

MR. ELKIN: I'll -- I'll alert the panel

to that.

BY MR. ELKIN:

Q. Mr. Israelite, you have a binder that has been placed in front of you. Just so you know what's in it, there's your direct written testimony, there's your rebuttal testimony, there's your deposition testimony, and then there's some exhibits, proposed exhibits, most of which you've seen in your deposition.

So, Mr. Israelite, you spent some time in your written direct testimony addressing the issue of compulsory licensing, correct?

A. Yes.

Q. And I believe it was paragraph 65, 64. I believe you went on at some length. Am I correct that it is your belief that the compulsory licensing scheme depresses the rates that Copyright Owners could get in a free market?

A. Yes.

Q. And am I correct that if you had your druthers, the correct standard that should be applied when determining mechanical license rates for interactive streaming music is the fair market standard?

A. My first preference would be not to have

a compulsory license, but to the extent we're forced to have one, we would favor a willing seller, willing buyer rate standard over the 801(b), yes.

Q. Thank you for that. Now, you believe that this case is about setting the proper value of a copyright owner's intellectual property right?

A. For mechanical reproductions, yes.

Q. And the Court is setting the value of the intellectual property for mechanical license purposes through this -- through this trial -- through these trial proceedings, right?

A. Yes.

Q. And am I correct that you believe that the compulsory licensing scheme is unfair to the Copyright Owners?

A. It's not only my opinion. It's also the opinion of the Copyright Office.

Q. And you believe that Congress punished all songwriters and music publishers by implementing the compulsory license, correct?

A. I believe in 1909 when they imposed a compulsory license for the purpose of regulating player piano rolls, that the effect of that today, more than 100 years later, is to punish the songwriting and publishing community, yes.

Q. And the unfairness of the compulsory license should have a bearing, you believe, on the 801(b) factors that govern this proceeding, correct?

A. I'm not sure I understand the question.

Q. Well, let me direct your attention to your direct testimony at paragraph 55.

JUDGE STRICKLER: Is that in your cross binder?

MR. ELKIN: Yes, it is Exhibit -- it's -- first exhibit, Amazon Trial 329.

JUDGE STRICKLER: Which paragraph, counsel?

MR. ELKIN: 55.

JUDGE STRICKLER: Thank you.

BY MR. ELKIN:

Q. And, specifically, it starts on page 18 and then carries over. And feel free, of course, to -- to review the entire paragraph. But I'm just really calling your attention to the last sentence of that paragraph, which begins on the first line at page 19, "the reason I feel it is important for me to do so is that I believe it bears upon the Section 801(b) factors."

Do you see that?

A. Yes.

Q. That was your testimony, right?
A. Yes.
Q. You believe that to be the case today, right?
A. Yes.
Q. Now, you have always disapproved of the compulsory licensing system, correct, ever since you knew about it?
A. When I was hired in, I believe it was February 2005, I was fairly unaware of -- of that issue. And I believe I testified a few weeks after the start of my employment, and I believe there was language in my testimony prepared by an outside law firm that suggested some support, but since I personally became aware of the issue and probably now for, I would guess, 11 to 12 years of my tenure, I've felt that way, yes.
Q. Have you ever stated that you have always disapproved of the compulsory licensing system, ever since you knew about it?
A. I may have stated that. I believe that since I was familiar with what it meant to the industry, I felt that way, yes.
Q. So you have stated that? You have stated in the past that you always disapproved of the

compulsory license system, ever since you knew about it, correct?

A. I don't recall using those specific words, but I'm telling you what my belief is about how I feel about it.

Q. Okay. Well, let's take a look at your deposition testimony at page 78 for the panel. That is Amazon Trial Exhibit 328. I believe it's the third tab in the binder.

A. I'm sorry, which paragraph?

Q. It's -- first of all, it's Amazon Trial Exhibit 328.

A. Okay.

Q. And, specifically, I'd call your attention to page 78 starting with line 7 and going to page 79, line 15. Let me just read it so that it's clear because it goes on for a little bit.

"Question" -- and this is me questioning you. But you remember me questioning you at your deposition, correct?

A. I do.

Q. Okay. "Question: But you believe that the compulsory licensing scheme up until now has been useful to the music publishing industry?

"Answer: Overall, no. I think it has

been harmful to the songwriting and music publishing industry.

"Question: And for how long a period of time has it been harmful to them?

"Answer: It's hard for me to speak to the times as early as 1909 when it was the first put in place, and I'm sure there's general acceptance that it was unharmful for the initial rate that was set by Congress to basically stay unchanged for, I believe, over 60 years with no adjustment whatsoever.

"And then since the time that it first started becoming adjusted, I believe we've been playing a game of catchup ever since and have never gotten to the proper place in terms of valuation, but I also just inherently believe that the compulsory license is unfair and improper to put on a property owner unless there's a compelling reason. And I don't think that the reason that existed in 1909, as I understand it, still exists today.

"Question: I" --

JUDGE BARNETT: I'm sorry to interrupt.

MR. ELKIN: Yes.

JUDGE BARNETT: This transcript is marked restricted over these passages.

MR. ELKIN: Well, Your Honor, good question. Let me express my thoughts with regard to that, as we know, that the rules do require within a 30-day period after the deposition has been conducted for the party to actually designate or redesignate the transcript as restricted. We received no redesignation at all, unless somehow I missed it.

JUDGE BARNETT: Well, the question is, are we dealing with restricted information here? It seems not, but --

MR. ZAKARIN: Your Honor, I think both sides have not removed restrictions, I think, in the had hurly-burly of getting ready for trial, and I suspect that is one thing that both sides are guilty of. I agree, this is not restricted.

JUDGE BARNETT: That's fine. Thank you. I -- I get it.

So as long as no one is uncomfortable with this testimony in open, we'll continue. And I apologize.

MR. ELKIN: No, no, not at all. Let me just say, for the record, in case this crops up again, we've carefully chosen potential impeachment aspects of his deposition testimony, and I -- I will

clue the panel into areas where I believe it is restricted based on obvious factors.

JUDGE BARNETT: Thank you.

MR. ELKIN: Sure.

BY MR. ELKIN:

Q. So let me just continue because I think we were just getting to the line. I'm reading from line 9 on page 79. "And I don't think that the reason that existed in 1909, as I understand it, still exists today.

"Question: I understand. And you've always felt that way?

"Answer: Ever since I learned about it, I have, yes."

Did you give those answers to the questions that I put to you at your deposition as I just read them?

A. I believe so.

Q. Thank you. Now, Mr. Israelite, you just testified that you testified in Congress in 2005 regarding, among other things, the compulsory licensing scheme, correct?

A. Yes.

Q. And that -- this was testimony that you provided to the Subcommittee on Courts, the

Internet, Intellectual Property of the Committee on the Judiciary, House of Representatives?

A. Yes.

Q. Why don't you turn to Exhibit -- what we've marked as 331 in your binder.

MR. ELKIN: Before I introduce this, I just -- panel, I just want to lay a foundation for this, if I may.

BY MR. ELKIN:

Q. I had asked you to turn, if you could, Mr. Israelite, without commenting specifically on the testimony quite yet, on page 9, it appears that there is some verbal testimony, and then your prepared testimony begins on page 10 and goes on through page 13.

Does that reflect the testimony that you provided to Congress on that date?

A. I have no reason to think it doesn't.

Q. That date, by the way, is March 8, 2005.

A. Correct.

MR. ELKIN: Your Honor, I would offer Amazon Trial Exhibit 331 into evidence.

MR. ZAKARIN: No objection.

JUDGE BARNETT: 331 is admitted.

(Amazon Exhibit Number 331 was marked and

received into evidence.)

BY MR. ELKIN:

Q. So let's turn to page 12. And this is part of the prepared testimony. And I direct your attention to the second paragraph, which reads, "We are grateful to Congress for its foresight in preserving the statutory compulsory license for musical compositions over the years, and amending Section 115 when necessary to maintain a level playing field for copyright users and rightsholders -- all for the ultimate benefit of the listening public. The compulsory license has made it possible over the past century for virtually any performing artist to record our members' musical compositions, while guaranteeing compensation to the songwriters for their creative efforts. Consumers have been the winners."

Do you see that?

A. I do.

Q. And that was prepared testimony that you provided to Congress, correct?

A. Yes, I believe this was the written testimony that was submitted.

Q. Okay. Now, you mentioned that this is when you first -- you provided this testimony after

a month into the job, right, as head of NMPA?

A. I think it was maybe a little less than a month, but around a month.

Q. And prior to that time, I believe, if you take a look at your testimony, you actually made Congress, the congressional members, aware of the fact that before you actually had assumed the position of head of the NMPA, in your role at the Department of Justice, you actually had occasion to work with NMPA and DiMA and other members of the music publishing community, correct?

A. I don't recall that from my testimony.

Q. Let me direct you back to the Exhibit 331, and specifically page 9. This is your -- your verbal testimony, the third paragraph. It reads, "I also had the privilege of working with members of the recording industry, the Digital Media Association, and songwriters, and I am hopeful that our previous experience of working together to combat theft of intellectual property can help us to work together in the future to meet the new challenges and opportunities of the information age."

Do you see that?

A. I do.

Q. Does that refresh your memory?

A. Well, no. Your -- your question, I believe, specifically said NMPA. And the reason why that caught me is because when I was hired for this position, I didn't know what NMPA was when they approached me. My -- my tenure at the Justice Department, serving as the chair of the intellectual property task force, I did not have interaction with NMPA.

Q. Right.

A. And when they approached me about the position, I recall being surprised that I had not had any interaction with them. And that's why when you had suggested in your question that my testimony suggested I had worked with NMPA, that didn't sound right to me.

Q. I apologize. I didn't mean -- yes, I did say that and I was wrong to say that. Forgive me for that.

I was trying to, basically, ask you in a general way whether you had worked with the various players in the music publishing area. You did -- you have worked with -- you worked with DiMA, certainly, before you assumed the position at the NMPA, correct?

A. I was familiar with DiMA. I was most familiar with the RIAA. My focus on the task force was mostly involving theft of intellectual property.

Q. Right.

A. And at that time, the RIAA was very active on that question, and music was just a subpart, obviously, for other copyright agencies.

Q. And you referenced songwriters in your testimony, that you had worked with them previously, correct?

A. I referenced songwriters specifically, yes.

Q. Thank you for that.

And now, from and after that time that you testified in 2005, you had occasion to work with members of Congress to help introduce or lobby for the passage of reform to Section 115 of the copyright statute, right?

A. Yes.

Q. That's known as SIRA, right?

A. SIRA was the name of one particular bill that we worked on with Congress, yes.

Q. And now --

JUDGE FEDER: What does that acronym stand for?

THE WITNESS: Please don't blame me because it's not accurate, but it's supposed to stand for Section 115 Reform Act, which would make it SORA, but they titled it SIRA. And that's what we went with.

BY MR. ELKIN:

Q. And -- and we'll talk a little bit about that in a moment, but just so that it's clear, this was an effort that you undertook with respect to actually implementing changes to Section 115, correct?

A. It was a cooperative effort with the Digital Media Association, yes.

Q. And you worked with Jonathan Potter of DiMA for at least a year to try to get passage of this new legislation?

A. I don't recall the length of time, but I did work with Jonathan Potter to -- to promote this legislation, yes.

Q. And you testified on direct that as part of your responsibilities as head of the NMPA, that you write articles related to the industry, correct?

A. I do.

Q. And sometimes you -- you provide -- you write op-Ed pieces?

A. Often.

Q. Take a look at Exhibit 333. Before I introduce this, I just want to ask you whether 333 is -- if you refer to the second page of the exhibit, is that -- in the lower left-hand portion, there's an article entitled "SIRA Provides Framework For Digital Music Future."

Can you identify that article as something that you and Mr. Potter co-wrote, which was published in Billboard in the year -- on or about July 29, 2006?

A. I don't recall if I actually wrote it, but it was certainly submitted by Jonathan and myself under our names.

Q. Okay.

MR. ELKIN: Panel, I'd like to move into evidence Amazon Trial Exhibit 333.

MR. ZAKARIN: No objection.

JUDGE BARNETT: 333 is admitted.

(Amazon Exhibit Number 333 was marked and received into evidence.)

BY MR. ELKIN:

Q. Now, if you would take a look at the -- there's a picture there. To the -- to the left is Mr. Potter, right?

A. Yeah, Mr. Potter is the -- the gentleman on the left.

Q. Yes. And you're the handsome man with the longer hair on the right?

A. If you need to know just how long ago this was, you can just look at my hair in the picture.

(Laughter)

Q. And the Capitol in between. So this is an article that you and he co-wrote and which was published in Billboard. I assume regardless of who -- where the text originated, you actually approved of -- of this piece before it actually got published, right?

A. Of course. I likely didn't write it, but I certainly approved it.

Q. All right. You have no reason that the statements set forth there weren't approved by you at the time, right?

A. I think I just said I certainly approved it.

Q. Okay. So I'm going to ask you about certain aspects of this, if I could. And I'm going to blow this up on the screen to make it easy for everyone to follow, if we could.

The first part of it that I'm going to direct your attention to -- and feel free to review that; I know we reviewed it at your deposition -- is really the -- the aspect which deals with Section 115 reform.

You write, "We have joined together to support legislation that will allow the music industry to jump aboard the digital revolution, providing music fans with more choices, creators with more opportunities and royalty-paying innovators with more freedom. The proposed Section 115 Reform Act of 2006 (SIRA) would replace a nearly century-old system that grants the right to reproduce or distribute a composition only on a song-by-song basis."

You were -- so this was right around the time that you were advocating for the passage of the Section 115 Reform Act? Is that right?

A. I don't recall the -- the date of whether the legislation -- where it was in the process, but it was certainly contemporaneous with our efforts to promote the SIRA Act.

Q. And that's one of the reasons why you and Mr. Potter teamed up to write this piece that -- that got published in Billboard, right?

A. I -- I don't recall, again, what the timing was of this in relation to what was going on on the congressional calendar, but it certainly would have been somewhere related for the timing of the bill for it to have been relevant for us.

Q. Okay. And let's -- I want to read another passage and ask you a question about what SIRA was designed to do. "SIRA solves the problems with the existing system by creating a statutory blanket licensing method that will allow digital music services to make a simple filing for all musical works."

You were touting that as a good thing, correct?

A. Yes.

Q. And then let's take a look at another section where you write, "The neutral Copyright Royalty Board will set rates for digital uses, based upon an independent evaluation of what each activity is worth."

Now, the CRB, you were referring to the CRB setting rates based upon an individual -- an independent evaluation of what each activity is worth, correct?

A. Oh, yes, physical required a very

different rate than -- than streaming did.

Q. And when you refer -- your reference to each is whatever activities were going to be provided was going to be different than what had been previously decided, which was on a song-by-song basis, right?

A. Well, it didn't -- no, it didn't necessarily differ as to whether it was song by song or not. It differed into the method of the reproduction.

So the rate structure for -- for physical products, which had always been a penny rate per sale per song, didn't translate into a streaming model. And so there was a recognition that streaming would require a different structure.

Q. Well, nonetheless, what you were trying to -- the point you were making here, was it not, that it was a good thing that the CRB would be in a position to actually address each specific activity that was at issue in terms of how it should be compensated for purposes of mechanical publishing rate-setting purposes, right?

A. No, I wouldn't -- I wouldn't say that I thought it was a good thing. I would say that within the context of living with the compulsory

license, that the idea was that we would try to empower a licensing process that could adapt to new digital types of -- of applications.

Q. Okay. But, in any event, you -- you understood, at least, what the CRB was going to do if this legislation passed was to look at each specific activity that was at issue in the case, right?

A. I don't -- I wouldn't say each specific activity. I would say that it was designed to provide a licensing framework for what was then a new type of mechanical reproduction that didn't fit with your -- the traditional pricing methods.

Q. Okay. Well, let's take a look at what you say with regard to who was going to be benefitting from this legislation.

Songwriters. "Songwriters, in particular, benefit from this proposed legislation. First, SIRA will ensure copyright owners their guaranteed rights in the digital world, including those associated with interactive streaming of their works. This means that songwriters will protect their performance and mechanical rights in business models that implicate both rights. Because interactive streaming could some day be the dominant

method of delivering music to the consumers, this victory could be one of the most significant for songwriters in the history of copyright protection."

So you actually -- you and Mr. Potter were predicting that streaming music would become -- back in 2006, you were predicting that streaming would become the dominant platform for music delivery, correct?

A. Well, I think we used the word "could," but I certainly felt that it could some day, was fairly prophetic ten years ahead of the time that it -- that it happened.

Q. And you thought SIRA was going to be a benefit to the Copyright Owners, right?

A. Yes, I thought that SIRA would be a benefit to everyone for the purpose of more efficient licensing of the rights.

Q. Let's talk about what you said concerning how the music providers, legitimate music providers would dramatically expand the number of songs. You write, "The biggest winner, however, will be music fans. Legitimate digital music providers will dramatically expand the number of songs they offer consumers."

So you recognized that -- that SIRA, if

it were passed, would dramatically expand the number of songs offered to consumers, correct?

A. Certainly.

Q. And, finally --

A. In a legal way, I should say. In a legal way.

Q. Yes, because at that time, what was rampant in the marketplace was piracy, right?

A. It was. And -- and we were very concerned about that.

Q. And so let's turn to what you say about that. "SIRA also helps the entire music industry fight its biggest threat -- piracy. With an entire universe of copyrighted songs at their disposal, digital music providers will be better able to compete with illegal networks that today offer a wider variety of music."

And there's no doubt in your mind that this legislation was going to -- with all of the changes, was -- would have the effect of helping create another tool to address piracy, correct?

A. Just to be clear, it -- it was helping in the legal licensing of the rights. The Services themselves are what would have helped combat the piracy, but I was interested, as was Mr. Potter, and

I think everyone in the industry, of trying to figure out how to make this new thing work.

Q. Right.

A. And I was concerned that the licensing mechanisms for the old models didn't work well for this new model.

Q. Right. So the compulsory licensing basically adopted the proposed changes in SIRA that would eventually have helped address the issues of piracy, right? Isn't that what you were saying?

A. I want to be clear about this because SIRA, obviously, hasn't happened and we've still seen the type of explosive growth in interactive streaming that we hoped would happen ten years before it did. And so it wasn't that I thought that SIRA was a necessary element for streaming to survive and to thrive and to grow. It has turned out not to be.

It's just that I thought it would help the licensing process work better. I still believe that. And that's why we did it, is to make the licensing process more efficient.

Q. And all of this occurred, your efforts to try to perpetuate the compulsory licensing scheme, albeit with these changes, you know, existed through

2006, right?

A. I'm sorry, I didn't understand.

Q. Yes. The bottom line here is that in 2006, after you had been on the job for more than a year, you weren't seeking to abolish the compulsory licensing scheme, were you?

A. Oh, no, that's not true. I absolutely was. DiMA was very much against getting rid of the compulsory licensing process. And so instead of trying to promote a bill fighting with DiMA, it was my judgment that this was something that we could agree on to make an improvement in the compulsory licensing process, but it was very clear that our preference would have been to get rid of the compulsory license. If that were not possible, then, of course, I would be interested in making it work better. And that's what this effort was.

Q. Right. But what you were saying in this -- in this article, you were touting the benefits of compulsory licensing to expand the activities that the CRB could actually address in this type of a proceeding, right?

A. I disagree completely. I do not think this article in any way touts the benefits of compulsory licensing. I think what this article

does is tout the benefit of, within a compulsory license, how it can work for interactive streaming licensing, which wasn't working well.

Q. I -- I appreciate that testimony, and the document, as they say, speaks for itself. Let me ask you a question.

JUDGE STRICKLER: Before you get to the next one. In the article you talk -- you talk about piracy, correct? And you indicate that streaming -- and from your testimony today, that streaming is in some sense an antidote to the problem of piracy; is that correct?

THE WITNESS: I would say a little bit more nuanced than that, Judge. I think that legal digital services were -- are and were an important factor in combatting piracy. Back in 2006, the dominant form of consumer preference was actually downloading at that time. It wasn't streaming.

And we were very interested in trying to move individuals who were stealing copies into legal models, and the streaming model, which was, in July of 2006, a brand-new concept, it wasn't yet in any way a popular activity for consumers, but it was something that we hoped would grow and become something that could also draw people away from the

idea of stealing copies.

JUDGE STRICKLER: Other than streaming, was -- was your trade association engaged in attempts to figure out other ways to stop the illegal piracy through law enforcement methods?

THE WITNESS: Very much so, although I think it's fair to say that my trade association took a very different approach than that of the record labels. The record labels at that time took a very aggressive legal approach against individuals who were doing the stealing. And as many people will remember, there were a lot of lawsuits filed by record labels against individuals.

The perspective of the publishers was a little bit different. We focused more on the business interests that were trying to profit from the theft. And that's why we had a very active litigation program going after not the individuals who were stealing but, rather, the businesses that were helping facilitate the stealing. And I mentioned earlier the Bertelsmann case. And that would be one example of what the NMPA did legally to deal with that.

We also had another case that went to the Supreme Court on -- the illegal download case. We

brought other enforcement actions but never against individual consumers. I don't like to call them customers. If they were stealing, they weren't really a customer. But not against individuals.

JUDGE STRICKLER: So did you feel that the law enforcement approach and streaming as a competitor to piracy combined to -- as tools to fight piracy?

THE WITNESS: My views, which were mostly formulated at my time at the Justice Department, less so in my year or so at NMPA, was that you had to attack this problem from many different angles, and that law enforcement was an important one. I thought the government's law enforcement was an important factor, separate from the civil rights of the property owners.

And providing legal alternatives was clearly an important factor in that. Because I thought the industry was slow to adapt to models that consumers wanted.

JUDGE STRICKLER: Thank you.

BY MR. ELKIN:

Q. A moment ago, Mr. Israelite, you made reference to streaming services. There were streaming services in effect in 2006, right?

A. I'm sure there were ones in effect. I don't believe they -- they had any size to be anything more than a blip on the radar screen at that time.

Q. So you're aware Yahoo had purchased Musicmatch, right?

A. I don't specifically recall that but --

Q. You don't deny that, do you?

A. I certainly don't deny it. I know you represented Yahoo, so you would know.

Q. With regard to AOL, AOL also had a streaming service, right, Now? Do you remember that?

A. I don't recall. Again, there were several that took advantage of our rateless license contract, and I don't remember the names of all of them. There were several, but none of them were deemed significant at the time.

Q. And CBS had last.fm, right?

A. Again, I don't recall that specific one.

Q. And Microsoft had a service as well?

A. I don't recall Microsoft service either.

Q. Okay. Now, turning to the 801(b) factors, you reference them in your written direct statement. Again, that is the first -- your first

-- Amazon Exhibit 329.

A. Are we on my written direct?

Q. Yes, your written direct.

A. Okay.

Q. It's footnote 15.

A. Footnote 15. Okay.

Q. It's page 18.

A. Yes.

Q. Right there. And now, I'm correct that you're familiar with these factors, right?

A. Yes, I've -- I've reviewed the 801(b) factors before.

Q. Now, am I correct that you've been on record as saying that two of these factors depress the value of music, in other words, they cut against the rightholders obtaining higher rates?

A. I don't think that's accurate. I think I've -- at least I tried to phrase it always as they could be used to lower the rates, not that they have, but they could be used in that way.

Q. So you -- is your testimony that you have never been on record as saying that two of these factors depress the value of music? Is that correct?

A. No, I -- I'm not attempting to recall the

language I used each time I've spoken about this issue. I'm telling you that I've attempted to express what my feeling is about it, which is that the two of the factors could be used to harm the value.

If I -- if I have been inartful in how I've said it in the past, then I'm sure you can show me that, but I'm not testifying that I may never have said it inartfully before.

Q. Well, I just want to be -- I want to be fair to you and fair to the proceeding. Why don't we take a look at Amazon Trial Exhibit 332.

A. Okay.

Q. The first page is that -- that's another picture of a handsome man. Do you recognize him?

A. This is, what, seven years later and much shorter and grayer hair, yes.

Q. Okay. And this is -- this is from the publication called the Creative Intelligentsia, which I will introduce in a moment, but this is an interview that you provided to this -- to this publication on or about -- or it was published on or about October 1, 2013, right?

A. I think, as we discussed in my deposition, I don't have any recollection of this

specific interview, but I have no reason to doubt it's an accurate reflection of my interview at the time.

Q. Okay.

A. But I don't recall doing it.

Q. Okay.

MR. ELKIN: So I would like to introduce, if I could, panel, Amazon Trial Exhibit 332.

MR. ZAKARIN: No objection.

JUDGE BARNETT: 332 is admitted.

(Amazon Exhibit Number 332 was marked and received into evidence.)

MR. ELKIN: Thank you.

BY MR. ELKIN:

Q. Take a look at page -- this is -- if you go through this -- and we did it at your deposition. I'm not going to do it today. But this is a question and answer --

A. I'm sorry, what page?

Q. Go to page 48. In the middle of the page, there's a heading that says What Are Your Biggest Issues?

A. Yes.

Q. And if you skip down -- you can read the whole thing, of course, but if you skip down six

lines down, I'm just going to read it into the record.

JUDGE BARNETT: We're not seeing page numbers.

MR. ZAKARIN: Where is 48? Yeah.

MR. ELKIN: 48?

MR. ZAKARIN: Is it the right-hand corner where it --

MR. ELKIN: Yes, it's the right-hand corner. It says 48/71.

JUDGE BARNETT: Thank you.

MR. ELKIN: Sure. Sorry about that.

BY MR. ELKIN:

Q. And let me just read to you the language, once everyone is there. "On the music interests, there are some things that I think are very important. Number 1, if we are going to be told that we must continue to operate under a compulsory license for our reproductions, at a minimum, the rate standard used by the Judges should be willing seller, willing buyer. Which means, the three Judges try to approximate what would happen in a free market versus the current rate standard, which is an 801(b) standard that uses four factors, two of which depress the value of our intellectual

property."

Is that the answer that you gave to the question what are your biggest issues?

A. I have no reason to think it's not an accurate reflection. I believe it was either a phone or in-person interview, so I was, obviously, speaking and not writing, but I have no reason to think it's inaccurate.

Q. Now, the two factors to which you made reference, those are factors B and D, correct?

A. I believe that's correct, but I just want to refresh. I haven't looked at 801(b) in a little while. I believe that's correct.

Q. Now, the B factor for the record, it's a fair return under existing economic conditions, correct?

A. That would be shorthand for it.

Q. Right. And the D factor, again shorthand, is the minimization of disruption for the structure of industries involved and on generally prevailing industry practices, correct?

A. Correct.

Q. Now, in your testimony, both in your written direct and I think you actually testified yesterday in your direct, you made reference to a

notion of an inherent value of music.

Do you remember that?

A. Yes.

Q. And is it your testimony that the inherent value of music should drive the panel to adopt the rate and structures proposed by the Copyright Owners?

A. I think that our -- our proposal over rate and structures take into account these 801(b) factors. It may be the inherent value would even be higher, but we attempted to make a rate proposal that took into consideration the 801(b) factors.

JUDGE STRICKLER: Sir, how do you define the inherent value of the -- of music?

THE WITNESS: I actually prefer that I don't define it but that whoever owns an individual copyright is the one to define it. I think that would be the most appropriate definition of it. What someone is willing to license it for would be that inherent value to that owner. That would be my view.

JUDGE STRICKLER: You would equate that with market value or --

THE WITNESS: That would be the market value, yes.

JUDGE STRICKLER: Thank you.

BY MR. ELKIN:

Q. So, ultimately, in response to Judge Strickler's question, the determination of the inherent value of music is a subjective determination by the copyright owner, correct?

A. I think it's -- it's subjective to each individual copyright owner, but in this proceeding, we're -- we're forced to set a rate that is blanket universal without regard to that, so you have to come up with a rate that attempts to evaluate that using the factors.

Q. Right. And the term, "the inherent value of music," those words, is not specifically found in 801(b), correct?

A. No, the language is -- is not found in 801(b). I think the concepts are there, but the language -- the word itself is not there.

Q. And the inherent value of music, again, is whatever the copyright owner believes in his or her view is correct, right?

A. My view is for that copyright owner, if they want to price their property in a free market at a certain number, I think for that property owner, that would be an inherent value to that

owner. That's my view of -- of what it should -- how it should work. That's not the system we have, but that's my view of how it should work.

Q. Right. And that's what drives the proposal that you seek in this case, right?

A. No, I think I answered earlier that our proposal was designed to take into account the 801(b) factors and that if we were just trying to describe an inherent value, we may have actually proposed something higher.

Q. Well, do you -- do you deny your written testimony that you've made reference to the fact that the inherent value of music should -- should be the basis upon which the Court should consider the proposed rates by the Copyright Owners?

JUDGE STRICKLER: Before you answer that question, can I just hear his last answer back, please.

THE REPORTER: "Answer: No, I think I answered earlier that our proposal was designed to take into account the 801(b) factors and that if we were just trying to describe an inherent value, we may have actually proposed something higher."

JUDGE STRICKLER: So when you say "we may have proposed something higher," are you saying you

did not propose something higher; you may have, if you had proposed an inherent value? I just want to make sure I understand what you said.

THE WITNESS: I think that's what I mean, is that if -- if we were just being asked the question how much do you think your property is worth, obviously every individual property owner, I would prefer answer that for themselves, like they get to do in other areas of their business where they're in a free market. For the purpose of this exercise, I likely would have gone back to my membership and asked them to just tell me what number would you like to charge for your property? Unfortunately, that's not the system we have. And so, instead, the process we went through to come up with our rate proposal did take into account the factors that are being used by this Court in determining the rate.

JUDGE STRICKLER: Which you understand to be lower than the inherent value?

THE WITNESS: Again, I can't speak for any one of my individual members as to what number they would put on it for themselves. If you're asking me do I think that the songs have even greater value to these Services than what we

proposed, I would say yes, but I think our proposal was meant to be a reasonable proposal under the factors.

JUDGE STRICKLER: Thank you.

BY MR. ELKIN:

Q. So let me just ask a related question.

Do you believe that the inherent value of music should drive the rates to be consistent for all categories of interactive streaming?

A. I believe we're only proposing one category of interactive streaming. And so I don't understand the question.

Q. So the -- you never recall having answered that -- you never recall having heard that question and understood it in the past?

A. I -- I don't recall. You're asking me now about it, and I'm giving you my -- my response to it now.

Q. I appreciate that too. Let's take a look at page 65 of your deposition. That's Amazon Trial Exhibit 328. And page 65.

And you can feel free to read before and after. I'm going to read to you the language that I want to call to your attention. And it begins --

A. Can I get there first?

Q. Sure. Let me know when you get to page 65.

A. I'm there now.

Q. Beginning on line 11.

"Question: So I understand, and you're on record, 801(b) governs and I get that. But you believe that the inherent value of music should drive the rates to be consistent for all categories of interactive streaming, correct?

"Answer: I do."

You understood, do you not, what I meant before you answered that question, right?

A. I don't -- I don't see that as inconsistent. I mean, we're proposing one category of interactive streaming.

Q. Thank you for that. Now, you testified on direct that you pick your battles in terms of when you fight and when you don't fight in terms of seeking a CRB determination. Is that correct?

A. I don't recall using the phrase "pick my battles," but it would -- that's an accurate description of how I view the CRB, yes.

Q. I -- I don't have a transcript in front of me. I'm just remembering from my feeble memory from yesterday.

But in the main, I think that was the point that you were making, correct?

A. Yes. I -- I have a philosophy about the right approach. And my philosophy you could maybe summarize as pick your battles, but I would -- I actually think it's a little different in that it's not just picking the battle that you think you can win; it's picking the battle that has economic importance. I guess that would be how I would put it.

Q. Right. And before you decided in Phonorecords I -- and I'm going to just tread on this very lightly because I'm not going to -- another service is going to be focusing on this to some extent, to a greater extent. You -- you decided not to fight over Subpart B because ultimately you didn't think that interactive streaming was going to be any big deal because it was in its embryonic state and there was nothing to fuss over, right?

JUDGE STRICKLER: Are you referring to the 2008 period or the 2012 settlement?

MR. ELKIN: 2008.

JUDGE STRICKLER: Thank you.

MR. ELKIN: Sorry.

THE WITNESS: At the time of the 2008 settlement, our primary concern was the rate that was going to be set for permanent digital downloads. That was the shift in consumer behavior from physical product to downloading. Physical is still a very important significant factor. Downloading was becoming a very significant important factor.

And our view was that those two rates were the ones that were going to matter for the five-year period that was relevant for Phono I. The interactive services at that time, we did not believe were economically significant at that time. We had obviously no way to judge the rate of their growth, but we didn't think that that was going to be economically that important during the five-year period. That's how I would put it.

BY MR. ELKIN:

Q. But, nonetheless, you were fighting with the Services in a protracted trial before you actually reached an agreement. You had weeks and weeks of trial testimony followed by weeks and weeks of rebuttal trial testimony before you got to an agreement; isn't that correct?

A. The timing of the agreement happened during the proceeding. Sometimes settlement

agreements can take a long time. Sometimes they talk about settlements on the steps of the courthouse. Sometimes they happen when you're in the proceeding because both parties have a different viewpoint than they did before the start of the proceeding.

But, yes, we settled during the proceeding.

JUDGE STRICKLER: Well, if I -- did you settle towards the end of the proceeding?

THE WITNESS: I believe it was -- it was maybe during the rebuttal phase of the hearing, if I recall correctly.

JUDGE STRICKLER: So you already had the direct phase and you already had discovery and you already had all the written direct and written rebuttal testimony done?

THE WITNESS: That's all true. But it was mostly focused on the Subpart A categories, because those were what mattered at the time. But, yes, the --

JUDGE STRICKLER: I understand. You talked a moment ago about how you rationally, you know, pick your battles and you look at what's economically significant. If I'm understanding your

testimony correctly -- excuse me -- the costs of the battle with regards to Subpart B in that 2008 proceeding were already sunk, they were gone, weren't they?

THE WITNESS: Oh, no, Judge. It wasn't about the cost of the proceeding at that time. Because the Subpart A rates were so dominant in the marketplace, we were going to experience the cost whether we settled Subpart B or not, quite honestly.

My philosophy of driving the settlement to get it done was that we believed that because the Subpart A rates were the ones that mattered to us economically, we wanted the Court to focus on those, and not have a lot of these other issues that had little economic significance cluttering the decision-making.

JUDGE STRICKLER: So to try to benefit our predecessors?

THE WITNESS: We hoped that it would. I think there's -- there was a risk, for example, not that this panel would approach it that way, but sometimes judges like to cut the baby in half. And so, for example, if, in the judges' mind, they wanted to give a healthy rate on interactive streaming and give maybe a lower rate on the Subpart

A rates, and that was some kind of a compromise in their mind, that would have been very bad for us economically because of the size of the activity.

We didn't want that to be something in play.

JUDGE STRICKLER: So there's a strategic benefit to dichotomizing through settlement?

THE WITNESS: It has been my strategic view from the first trial through this trial. It's why the two sides flipped this time. It's why we've now settled Subpart A and are litigating Subpart B, is because we believe economically in the five-year period it's the -- it's the streaming rate that will matter, not the physical or download rate.

JUDGE STRICKLER: Thank you.

BY MR. ELKIN:

Q. Well, in fact, it wasn't just the written direct and written rebuttal testimony. These were weeks and weeks of testimony, both through the direct portion -- back in those days, you didn't have the direct and rebuttal truncated the way you have today.

A. Correct.

Q. So you went through an entire trial of direct testimony, like we're doing here, and then

another trial with respect to the rebuttal testimony, before you got to any agreement. Isn't that correct?

A. It's correct that the trial structure was different. It's correct that the sides were in different order, that we went first in that trial.

That's all correct. It doesn't change one bit our desire to have settled the Subpart B rate and ultimately to have accomplished that before decision.

Q. Okay. Just a couple more questions with regard to these proceedings. And, again, I'm going to defer to my colleagues with regard to delving into this with a little bit more detail.

I want to just harken back to the inherent value of music concept for a moment. The -- by the way, the current rate structure under Subpart B has now been in effect for -- for nearly ten years, save for that portion of Subpart B that was tweaked dealing with the "greater of" language that you testified earlier, correct?

A. The basic Subpart B structure has been in place since the first settlement.

Q. Okay. Now, am I correct that in Phonorecords I, you, David Israelite, and the NMPA,

considered the inherent value of music should drive the determination by the CRB?

A. I don't recall whether I used that language ten years ago or not.

Q. Do you recall using it at your deposition when I asked you about it?

A. I don't recall.

Q. Let's take a look at your deposition, which is Amazon Trial Exhibit 328. And there are two portions that I'll direct your attention to. One is at page 66, lines 11 to 18, and then -- then I'll read you another portion in a moment.

"Question: Do you remember taking the position in Phonorecords I that the inherent value of music should drive the determination by the CRB?

"Answer: I don't recall the language we used ten years ago, but I'm sure that our position was similar and our viewpoint about it."

Do you remember that testimony?

A. I don't remember this specific exchange, but it's -- it's encouraging that it seems to be exactly what I just said.

Q. Okay. Thank you for that.

Now, you believe the current configurations of Subparts B and C should be

eliminated because companies like Amazon have non-music businesses that benefit from the Copyright Owners that may not be compensable, correct?

A. That's one of the many reasons.

Q. Okay. Now, am I also correct that the 801(b) factors do not specifically require in your mind that consideration be given to the non-music or businesses of the DSPs?

A. I disagree with that.

Q. And have you -- have you never stated that you believe it is correct that the 801(b) factors do not specifically require that consideration be given to non-music business or businesses of the DSPs?

A. I don't think that the 801(b) factors use that exact language, but I believe that the concepts within the 801(b) factors support doing just that.

Q. Okay. So you -- so you would agree that you have -- you agree that the 801(b) factors do not specifically require consideration?

A. The 801(b) --

Q. You gave in to the non-music businesses, correct?

A. The 801(b) language is what it is. And it doesn't include specific references to non-music

businesses in the factors, but there are a lot of things that it doesn't specifically say. It -- it has concepts in it that I believe support doing just that.

Q. Right. And you agree that in Phono II, not Phono I, but Phono II, the parties extensively negotiated how the regs would address the allocation of the bundled service revenues to specific offerings constituting the Subpart B and Subpart C activity?

A. We negotiated the language for Phono II's settlement before it was submitted, yes.

MR. ELKIN: Your Honor, I am going to -- with the Court's permission, would like to go into restricted session.

JUDGE BARNETT: Okay. Anyone in the courtroom who has not signed the nondisclosure agreement, if you would please wait outside. Do you think it will go the remaining 15 minutes before the break, Mr. Elkin?

MR. ELKIN: Yes.

JUDGE BARNETT: Okay. And you can get a jump on the lunch line.

MR. ZAKARIN: Let me just ask, if I can, is this going to be restricted going -- with respect

to NMPA or to other Services?

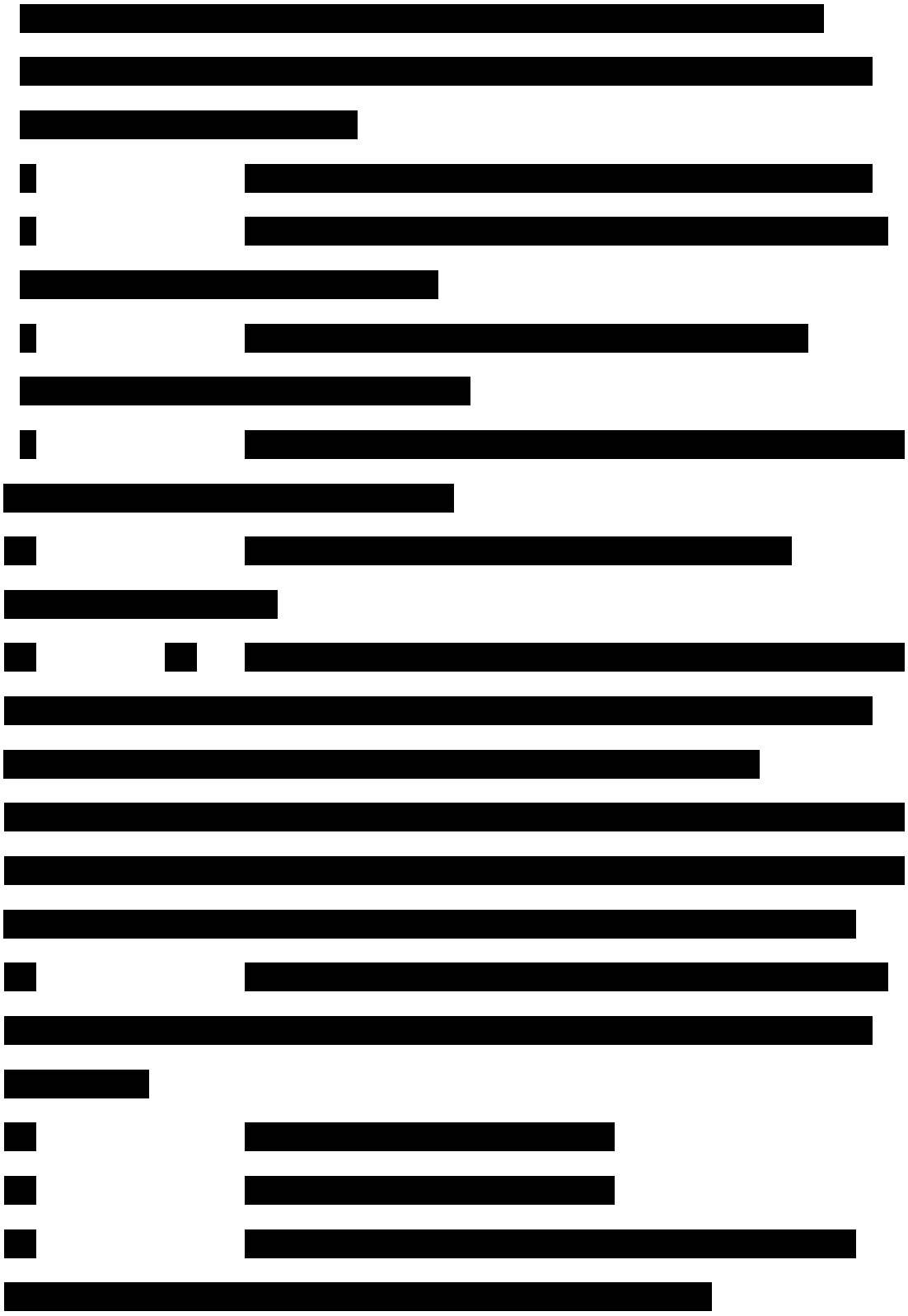
MR. ELKIN: No, they're fine. They can remain, if the Court is amenable.

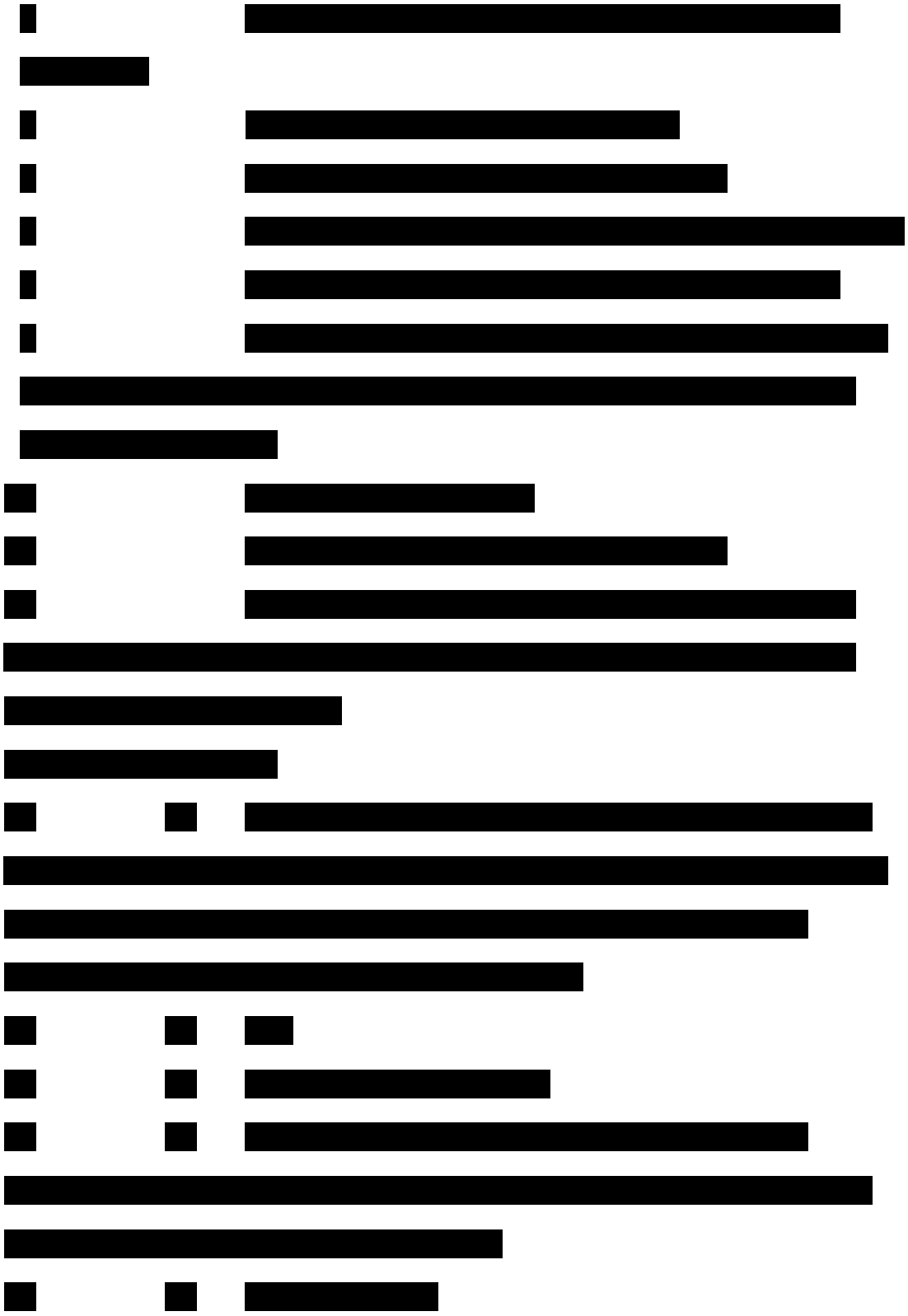
JUDGE STRICKLER: "They" meaning NMPA people?

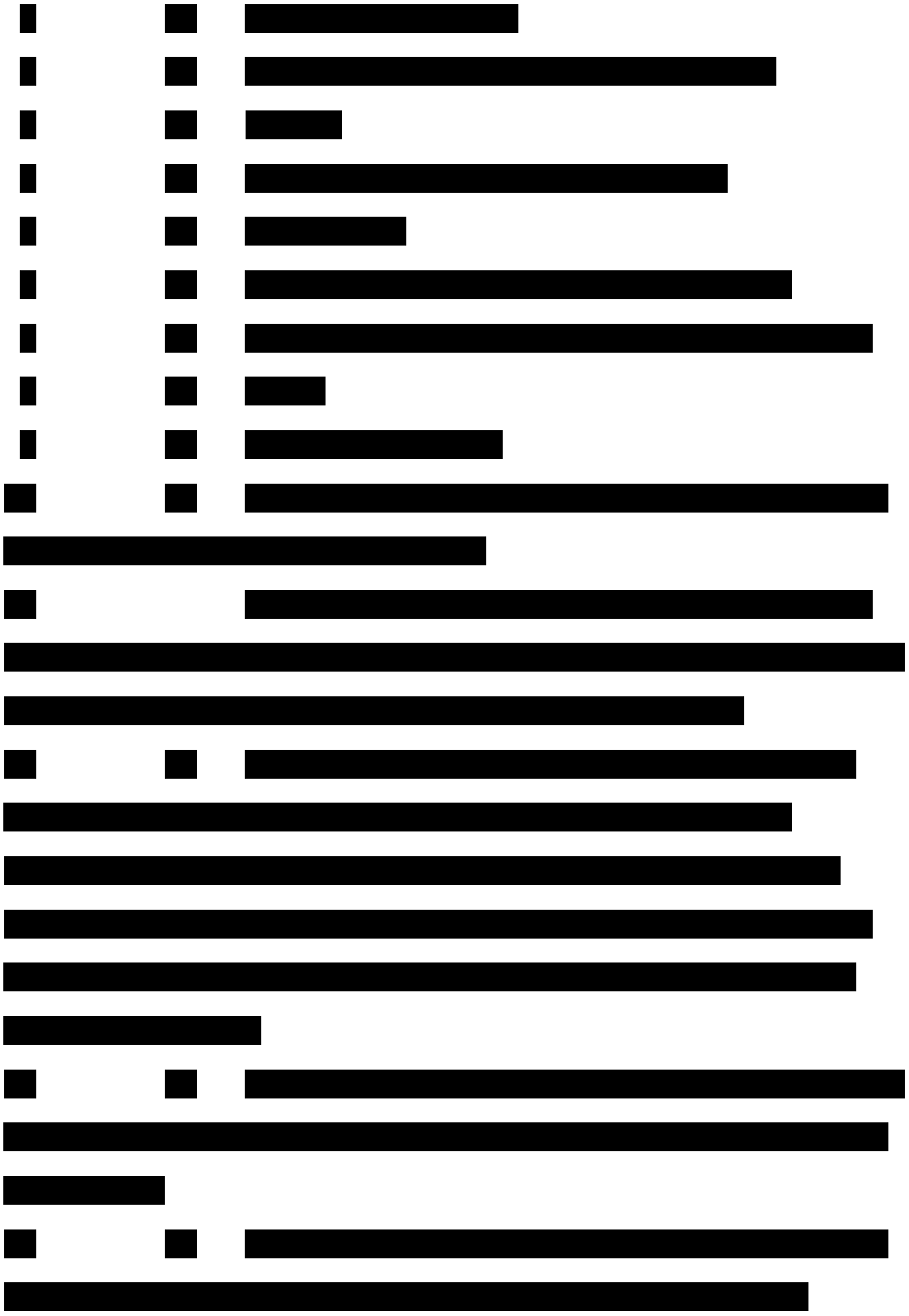
MR. ELKIN: Exactly. It's only going to be the NMPA's confidential information.

JUDGE BARNETT: So the evidence to be adduced will only relate to NMPA confidential information. If you're privy to that, you may stay.

(Whereupon, the trial proceeded in confidential session.)

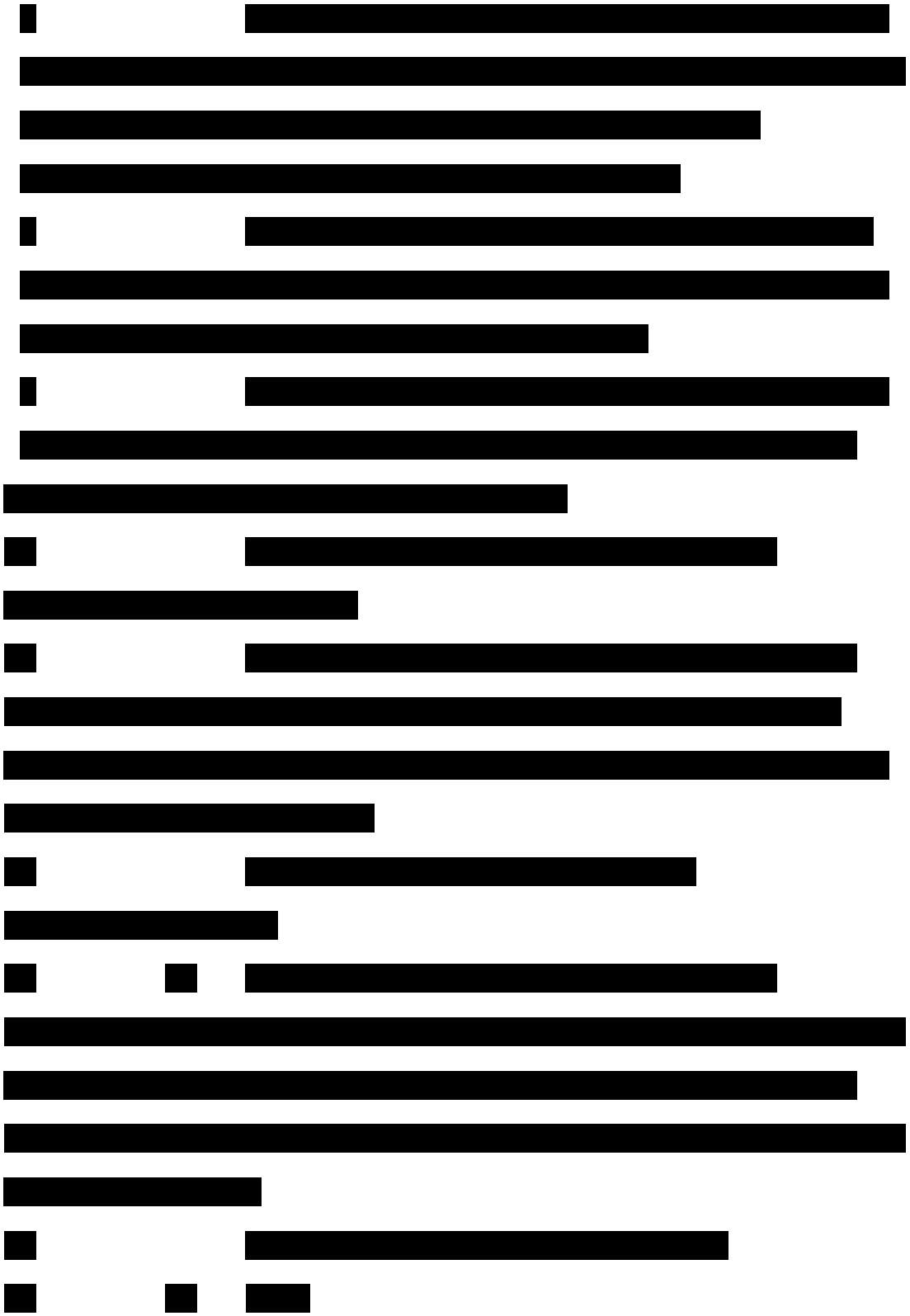


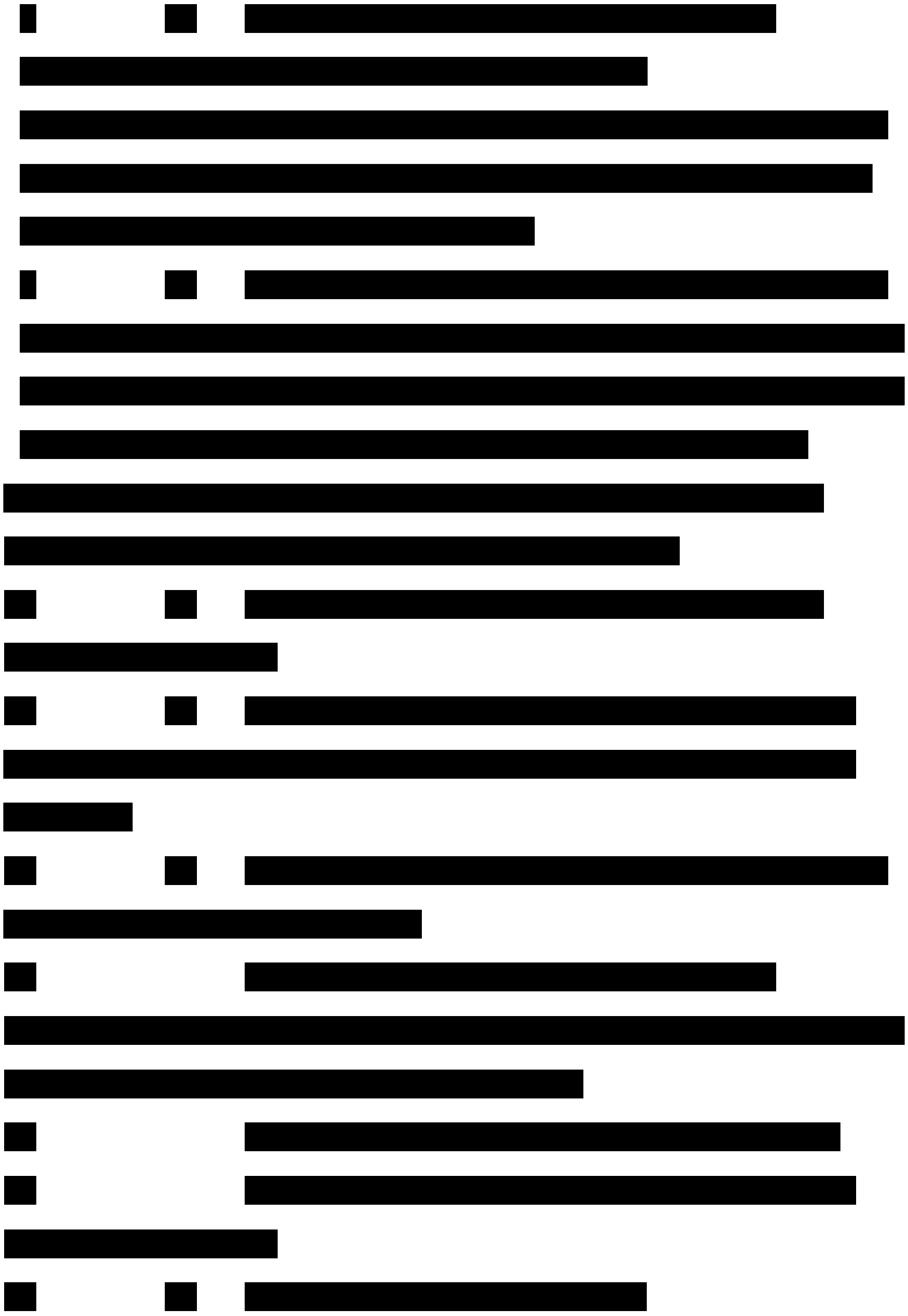




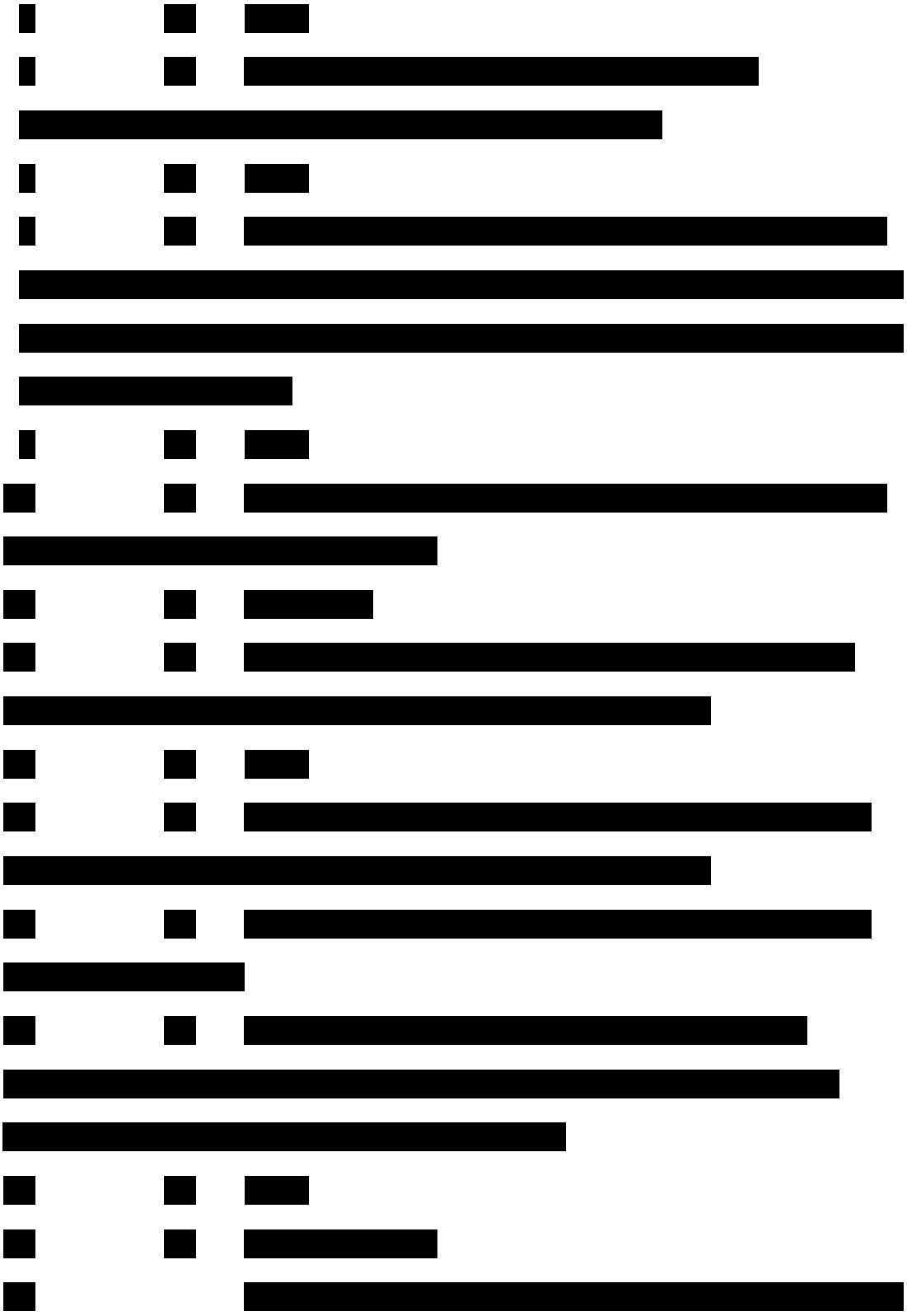
[redacted]

[redacted]





[redacted]



[redacted]

(Whereupon, the trial resumed in open session.)

O P E N S E S S I O N

AFTERNOON SESSION

(1:07 p.m.)

JUDGE BARNETT: Please be seated.

Ladies and gentlemen, we have been rolling with the exhibit numbering exercise, and living on a promise of de-duping after we're done, which we're going to go with, let me just make sure you understand when you de-dupe, you are going to have to give us a key because in our notes we're going to have different numbers, and in the transcript there are going to be different numbers, so we will need a table, a comparison table, so we know what's what.

All right? Thank you. Mr. Elkin, you are the one?

BY MR. ELKIN:

Q. Afternoon, panel. Afternoon, Mr. Israelite.

I think before we broke for lunch, we were reviewing Amazon Trial Exhibit 306, which is -- begins with Bates stamp 1424. I am going to be moving through other pages of this exhibit, and I would note, as I'm sure the panel already has observed, all three pages are 1424.

So I am just going to refer to them as pages 1, 2, and 3 for purposes of going through the examination.

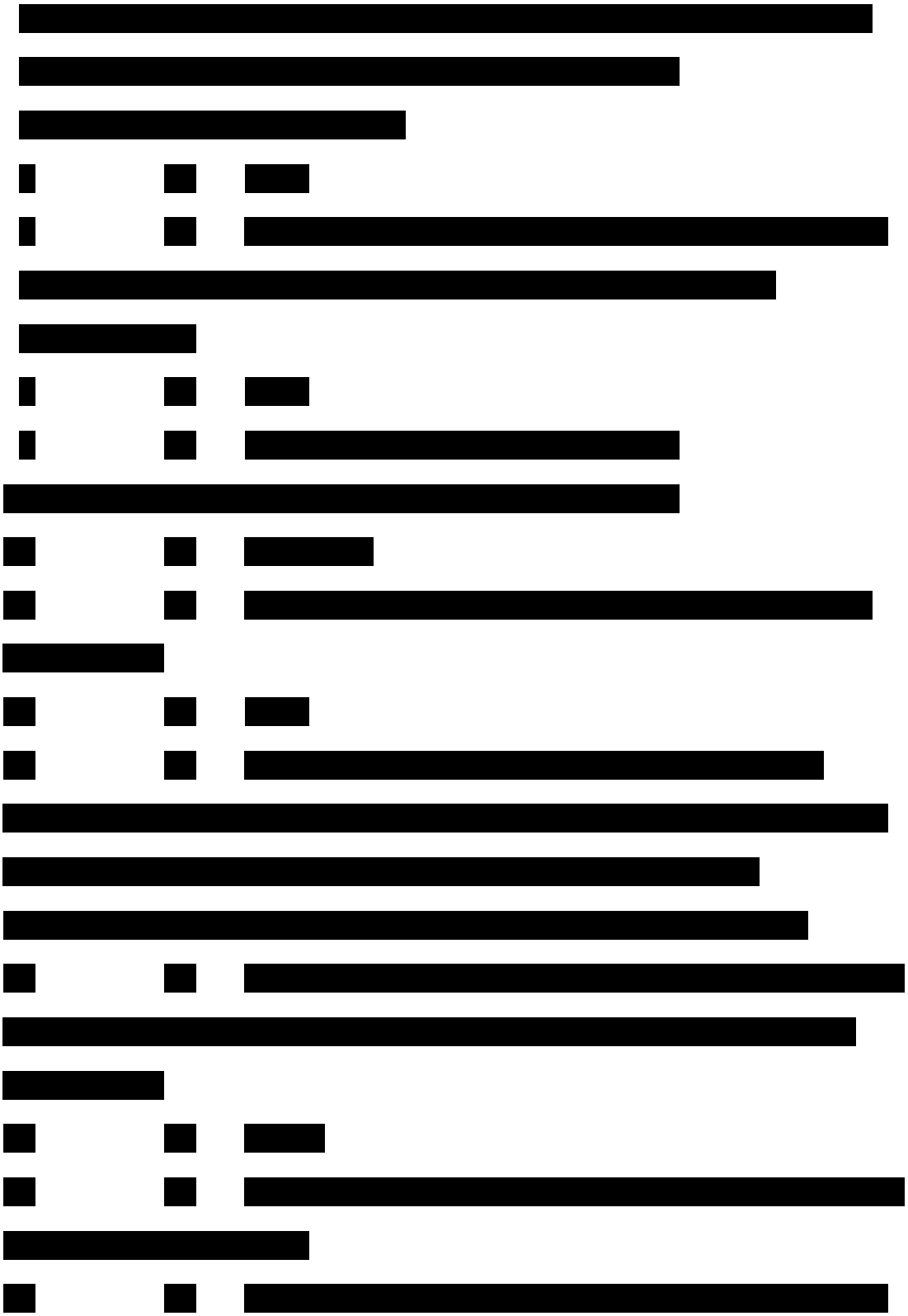
JUDGE BARNETT: Thank you. Will this be open or restricted?

MR. ELKIN: This is going to be -- we're still continuing, so it is going to be restricted for now, and hopefully in about ten minutes we can do the remainder in an open session.

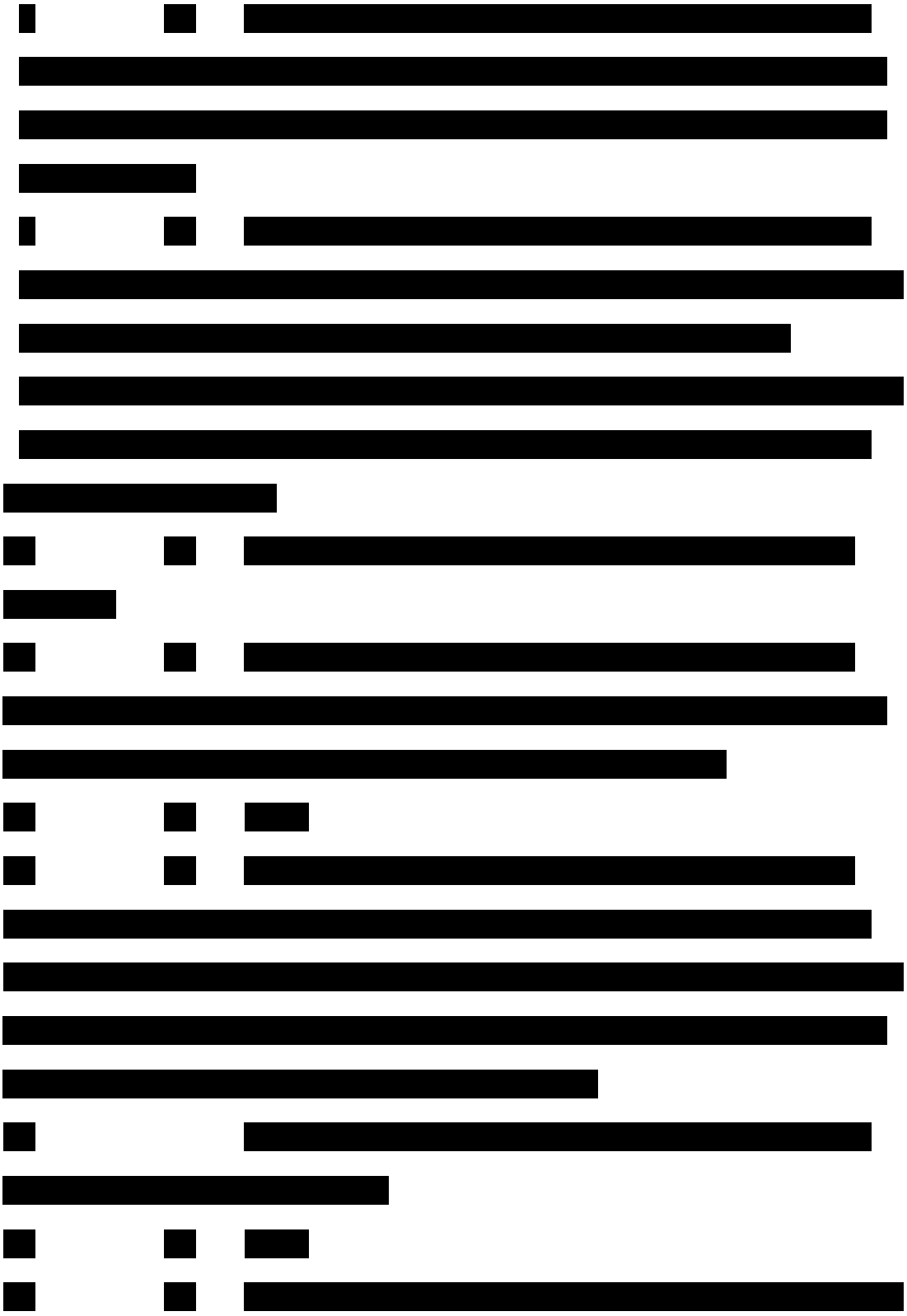
JUDGE BARNETT: Okay. If there is anyone in the hearing room at this time, who is not permitted to hear this restricted information, please wait outside.

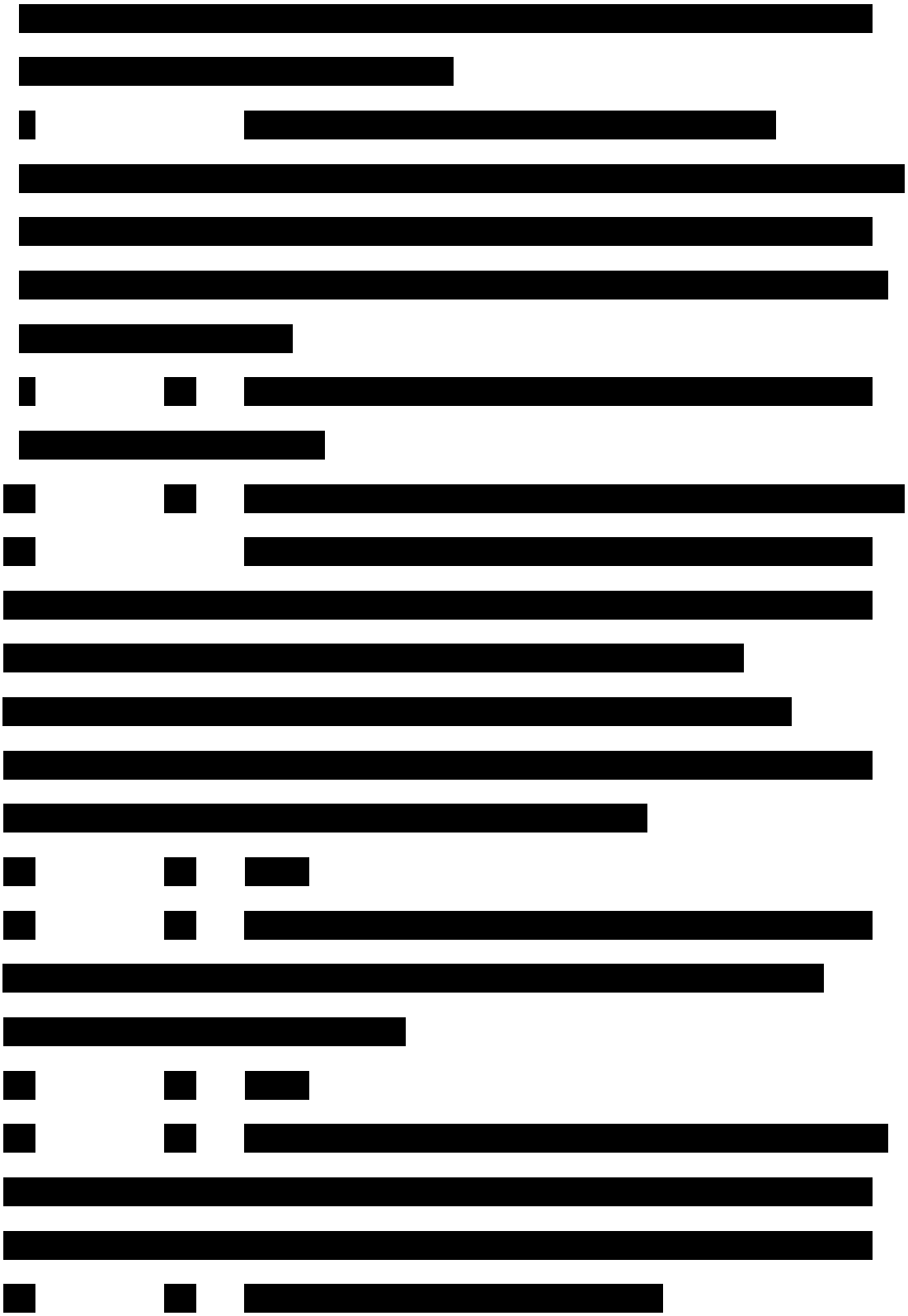
(Whereupon, the trial proceeded in confidential session.)

C O N F I D E N T I A L S E S S I O N



[redacted]



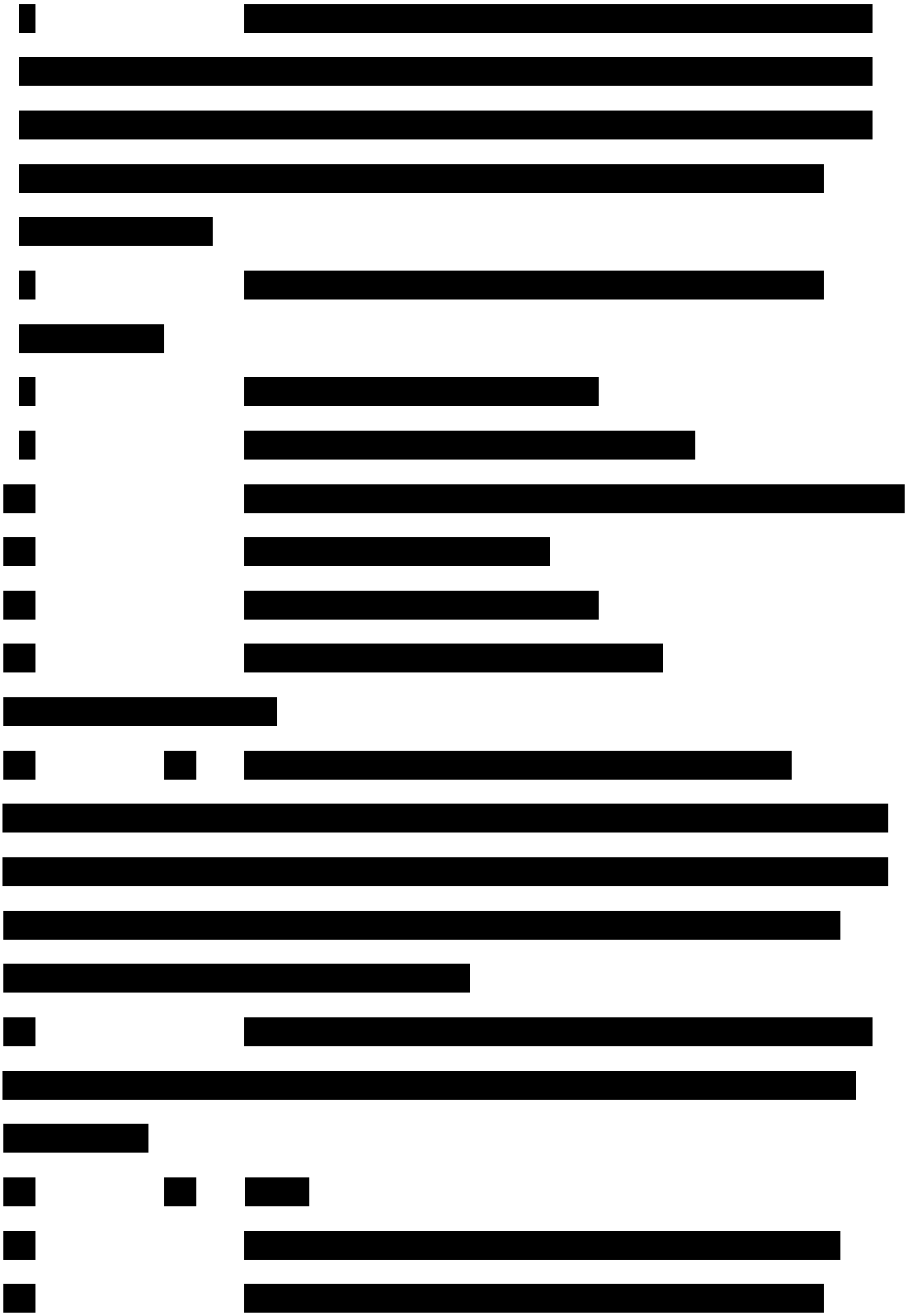


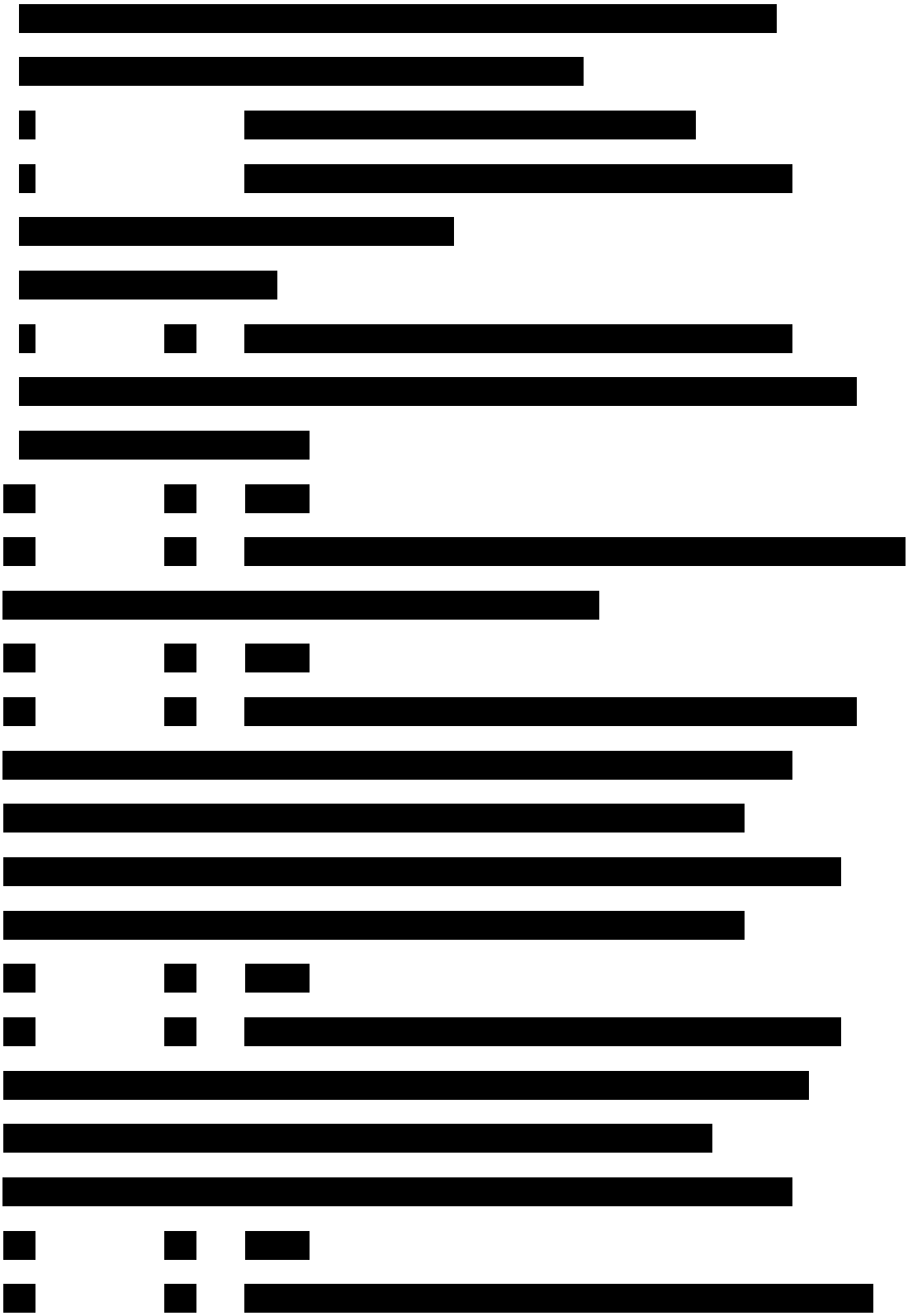
[redacted]

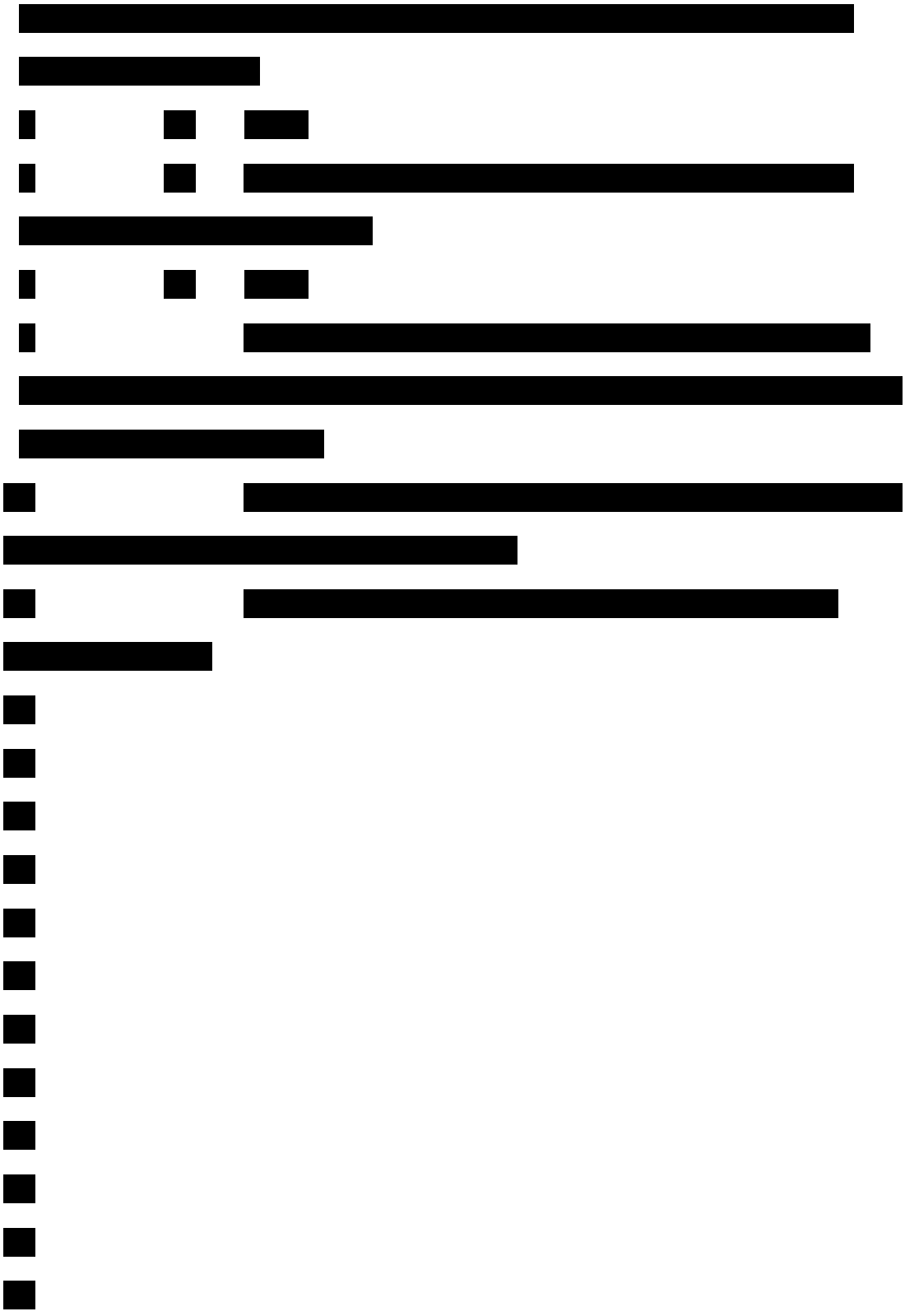
[redacted]

[redacted]

[redacted]







O P E N S E S S I O N

BY MR. ELKIN:

Q. Mr. Israelite, I want to focus back on the mechanicals, just a general discussion, if we can, now that we're out of the numbers here.

Am I correct that the mechanical income has been dropping since long before the resolution of Phonorecords II?

A. We didn't have the same type of data before the calendar year 2013, but I believe that mechanicals have been shrinking for a longer period of time than that, yes.

Q. And it has been dropping well before the resolution of Phonorecords II, right?

A. Oh, yes, it dropped significantly during what we would call kind of the theft period, where there was a lot of theft of copies. And I believe it was dropping since that time.

Q. It dropped also due to the disaggregation of the album, right?

A. The disaggregation of the album certainly had an effect, but I wouldn't say that was one of the major causes of the decline in mechanicals. I do think it caused some decline in mechanicals.

Q. So the notion that individuals --

withdrawn.

So the notion that individual tracks were being consumed by the public as opposed to full albums had no material effect on the decline of mechanicals?

A. I don't know how to judge how large of an effect it had. I think it had some effect. I don't know to what extent that drove the overall decline. We didn't have the kind of data points that we do now back then.

Q. But you wouldn't disagree with me that the -- the drop-off with respect to mechanicals was material due to the disaggregation of the album?

A. I don't know if I can say it is material or not. I don't know how much of it was attributable to the disaggregation.

Q. Tell me if you agree with me as to the following: The music publishing industry is fortunate that we have a bundle of rights that produce income in different ways. While mechanical revenue is down significantly, performance income has mostly been held steady and publishers have become more aggressive in seeking alternative revenues from sources such as synchronization, lyrics, tablature, and merchandising.

Would you agree with that?

A. I don't recall specifically saying or writing that, but it sounds like something I have said or written.

Q. Would you agree with that?

A. I do.

Q. Now, I believe that you have testified in your written direct statement that Internet streaming was still experimental, in its experimental stage in Phono I. Is that correct?

A. Which part of my direct statement is this?

Q. Let's take a look at paragraph 81.

A. 81?

Q. Yes.

A. Okay.

Q. It is page 30. "When the current statutory rates and rate structure were negotiated, interactive streaming was in its experimental phase."

A. Yes.

Q. So you agree with that, right?

A. Yes.

Q. You wrote it. And that proceeding occurred nearly ten years ago, right, as to the

Subpart B rates?

A. I believe it started more than 11 years ago but, yes, it was approximately ten years is when it was settled.

Q. And as I mentioned earlier, other lawyers are probably going to question you about that. But you testified that -- in your written direct statement that the parties in Phono II arrived on the scene to make a quick settlement, right?

A. That the parties arrived on the scene to make a quick settlement?

Q. Yeah, when Phono II came around, that the parties were ready to -- they were ready to make a quick settlement. Do you remember that?

A. I think that it was clear very early that all of the parties thought it might be best to try to settle and not go through another trial so soon after the last one.

Q. Well, let me just -- look at page 35 of your written direct testimony, paragraph 100. That's Amazon Trial Exhibit 329.

"So for these reasons, the parties to Phonorecords II came prepared to quickly negotiate a settlement and were able to do so in the proceedings without the need to file a written direct statement,

take any discovery, or engage in any hearings." Right? That's accurate, right?

A. Yes. We -- it reminds me, again, that I split my infinitive here, but yes.

Q. Okay. No harm, no foul.

So now you further testified -- withdrawn.

Is it your belief that none of the participants here, save for Spotify, had launched any interactive streaming services by the time of Phono II?

A. I don't recall any of the parties here in this proceeding operating interactive streaming at that time. I believe at some point during the proceeding Spotify entered the United States, but they weren't a party to the proceeding nor do I believe were they a member of DiMA.

But I don't recall the other four engaging in interactive streaming at that time, no.

Q. Right. And Spotify launched in the U.S. in 2011, right?

A. I don't remember exactly when they launched, but I believe it was sometime during that entire process of Phono II.

Q. Now, just with respect to the proceeding

itself, it is true, is it not, that the negotiation related to Phono II took a year to negotiate; is that correct?

A. I don't remember the entire length from start to conclusion, but I have no reason to disagree with the time period of -- it may have been a year.

Q. In fact, you represented to Congress that it took a year for that negotiation to take place, right?

A. If I did, I'm sure it was fresh in my memory when I said that to Congress. Right now sitting here, it is not fresh in my memory how long the process took, but I have no reason to dispute it took a year. I just don't remember.

Q. I will refresh your memory in a moment. And would you agree with me that there were 25 parties to that negotiation?

A. I don't think that's accurate. I think that DiMA had several members that were not participants in the negotiation, but that ultimately were included in the settlement, but I don't think they participated in the negotiation, no.

Q. So do you deny that 25 parties were involved in Phonorecords II?

A. Well, I think it is just the extent of how they were involved and when they were involved. And so ultimately I believe all of the DiMA membership had to sign on to the settlement, but that doesn't mean they were involved in the process itself.

But my recollection is there were quite a few parties at the end that had to come together for the purpose of a final settlement to avoid the trial.

Q. Do you remember providing congressional testimony in 2012 that the negotiation for Phonorecords II took an entire year and involved 25 parties?

A. I don't remember that specific phrase, but, again, I have no reason to dispute it took a year. And it may have involved 25 parties signing the settlement, but I don't think that many were involved in the process itself.

Q. All right. Well, just to be fair to you, let's take a look to refresh your memory at Amazon Trial Exhibit 337.

A. 337, okay.

Q. 337 for identification is a printout from the NewsRoom reflecting a congressional hearing that

took place on June 6th, 2012.

A. It was June 8th, I believe.

Q. Well, it says June 8th at the top.

A. I'm sorry.

Q. If you take a look three lines down, it says June 6th, 2012.

A. Got it.

Q. And then if you skip your eye down, more than 70 percent down on the page, you will see your name there. And I am going to point to where in the transcript in a moment, after I have it introduced as an exhibit, but before I do that, would you tell me this is the -- you testified at a hearing before the House Committee on Energy and Commerce, Subcommittee on Communications and Technology, on the future of audio on or about June 6th, 2012?

A. Yes.

Q. And let me just call to your attention page 19, and I am going to introduce this.

MR. ZAKARIN: Page 9?

BY MR. ELKIN:

Q. Page 9 -- no, page 8. So is this the testimony that you provided to Congress on that date, June 6th, 2012?

A. It appears to be, yes.

MR. ELKIN: Your Honor, I move into evidence Amazon Trial Exhibit 337.

MR. ZAKARIN: No objection.

JUDGE BARNETT: 337 is admitted.

(Amazon Exhibit Number 337 was marked and received into evidence.)

BY MR. ELKIN:

Q. Let me direct your attention to page 9. The eighth line down, the eighth paragraph down, I apologize, and I will read the first -- I will just read this paragraph quickly. "Just a few months ago, 25 parties completed a year-long negotiation over rates for five new categories of music services to allow flexibility in creating new services that enable consumers to access and use and purchase music in previously impossible ways. These new categories allow consumers to enjoy and access their own music across every electronic device. And parties representing digital services, record labels, and songwriters and publishers are currently involved in discussions on how to work together to improve our licensing system."

Was that an accurate testimony that you -- withdrawn.

Is this testimony that you provided to

Congress on June 6th, 2012?

A. I don't recall saying it, but I have no reason to think it is not.

Q. And was this truthful and accurate at the time that you provided this testimony?

A. I believe so, yes.

Q. Now, you are aware, are you not, that during the Phonorecords II negotiations that my client, Amazon, undertook its investments in locker services, correct?

A. That --

Q. That eventually became -- that eventually fell into the category of Subpart C, correct?

A. I don't recall the timing of when they launched that, but I recall that the company did have an interest in that category, yes.

Q. And Google participated as well in Phonorecords II, correct?

A. Oh, yes, they were very concerned about Subpart A.

Q. And the same with Pandora, they were a participant?

A. I don't recall Pandora participating. They were a very active member of DiMA, but I don't recall their direct participation in Phono II.

Q. Well, if I were to show you the docket sheet that would reflect the petitions submitted and Pandora is on there, would that refresh your recollection?

A. If I remember correctly, they filed as a party. We were preparing to file a motion to exclude them as not properly being an interested party because they weren't operating any Section 115-type services, but then we ended up settling before we filed that motion, if I remember correctly.

Q. So I just want to make sure -- let me start over.

Do you know, was Pandora a participant in Phonorecords II?

A. They may have filed as an initial party. I'm sorry, I thought you were asking me about the negotiation on the settlement, if I misunderstood, they may have filed as a party for Phono II.

Q. And Apple also was a participant in Phonorecords II, right?

A. Oh, yes, they were the dominant provider of downloads in Subpart A.

Q. So both Apple, Pandora, Amazon, and Google were all participants in Phonorecords II and

Spotify, who was not a participant, had launched during the period of time that Phonorecords was pending, correct?

A. Yes, Amazon, Apple, Google, Pandora were all participants and members of DiMA, I believe. They were not active in the Subpart B categories, but they were participants, I believe mostly for the Subpart A categories.

And Spotify, as I previously testified, I believe had some -- it may have been an experimental or a trial, but some type of launch in the U.S., I believe, during the proceeding, but they were not a party or a member of DiMA, if I remember correctly.

Q. Now, you believe that the current rate structure agreed to by the Copyright Owners in Subparts B and C in Phonorecords II should be disregarded because at the time these rates were set, on-demand streaming was in its experimental phase; is that correct?

A. Well, I think they should be disregarded for several reasons, one of which is all the parties agreed that's what would happen, but I also think it is true that our view about those categories was very much shaped by the fact that they were in an experimental phase, did not represent a significant

amount of revenue, and, therefore, we were -- we were experimenting with how to best try to figure out how to make them work.

Q. Okay. And my question, let me try to ask my question again.

Is it your view that the rate structure agreed to in Phonorecords II should be disregarded because on-demand streaming at that point was still in its experimental phase?

A. That's one reason, yes.

Q. Now, would you agree with me that if Amazon exited the on-demand streaming space after the results in this proceeding, that that business could be characterized as experimental?

A. I don't think that at this point if Amazon were to exit it would really be experimental. They had been running a streaming service for some time. They have now started running a different type of streaming service. But it would not be experimental in the same way.

It would certainly be early in the life of the full service Amazon service, but I wouldn't call it the same type of experimental exercise as we did for what was going on back in Phono II.

JUDGE STRICKLER: I'm sorry, when you say

"experimental," what do you mean?

THE WITNESS: I think experimental captures several things. First of all, I think when we say it was experimental in Phono II, I think it means that we didn't have a great deal of data to rely upon when discussing rate structures.

I think, Number 2, we say it was experimental because it had not yet been widely adopted by consumers as a preferred method of access of music or use of music. And so it was experimental in that way too.

JUDGE STRICKLER: Thank you.

BY MR. ELKIN:

Q. Well, let me go back to, if I could, the thread that I was on just a moment ago. Do you deny that if Amazon has relatively recently launched their full service interactive streaming services, they would -- and they would exit, following the rates here, they would be considered to be -- that service would have been considered to be experimental?

MR. ZAKARIN: Asked and answered.

MR. ELKIN: No. I am actually impeaching him now.

THE WITNESS: No. Again, I think it is a

different kind of experimental, when we say experimental, I wouldn't call it experimental. And it is for the same two reasons I gave Judge Strickler.

First of all, it's -- the data that is available about interactive streaming is much more developed today, both -- mostly from other Services that run similar type services. And, secondly, it is becoming the dominant form of consumer use.

And so for those two reasons, I wouldn't think that what Amazon has done is -- would be experimental, if they were to exit at this point.

BY MR. ELKIN:

Q. Thank you, Mr. Israelite. Take a look at Amazon Trial Exhibit 328, pages 188 to 189.

A. I'm sorry, 328?

Q. 328, pages 188 to 189. Tell me when you are there.

JUDGE STRICKLER: This is in the cross book again?

MR. ELKIN: Yes, it is cross.

JUDGE STRICKLER: The pages, I'm sorry?

MR. ELKIN: Pages 188 and 189, lines 12 to 25 on 188 and lines 2 to 16 on 189.

BY MR. ELKIN:

Q. Tell me whether or not this -- your answer to my question that I am about to read to you was what you gave at your deposition.

"Question: And if the participants in this proceeding are not participants in Phonorecords IV, would you consider their services to be experimental as well?

"Answer: Well, they might be. So Pandora, which is a participant, has not yet launched their service. If they launched it and a couple of months later said this isn't really working for us and pulled the plug, I would very much think that that was an experimental service that they launched.

"Amazon has relatively recently launched their full service interactive streaming service. The same would be true with them. We don't know how long that would be the case.

"Apple, which mostly had been in the business in the music space of selling downloads, I guess its experience with music has recently offered an interactive streaming service. And if they didn't stick with it, then it might be that Apple was experimental with it.

"So I do think that the length of time

that a company commits to doing it has some influence on whether we think it is experimental."

Was that the answer that you gave to my question at your deposition?

A. Oh, yes.

Q. Thank you. Now, Microsoft, in fact, has exited the streaming business, right?

A. I don't know whether existing customers are still able to use their service or not, but they are not active in it any more.

Q. You think it has been discontinued, right?

A. Yeah, I don't think a new customer could join it, but I just don't know whether existing customers are being serviced still or not.

Q. So it has been discontinued, right?

A. I think I just said that, yes.

Q. Okay. And you know that Yahoo actually exited the space, right?

A. I believe that's true, yes.

Q. Now, Mr. Israelite, you have referred to the digital service providers as "dumb pipes," correct?

A. I may have referred to them as that before, yes.

Q. But, in fact, you have heralded these Digital Services as important partners in your business, correct?

A. I think they are important partners, yes.

Q. And you believe that they have helped the industry to stem the flow of piracy, correct?

A. Yes, they have played a positive role in that.

Q. And you believe that the services -- that the on-demand streaming services that are provided have increased the availability of existing works and the overall volume of works, correct?

A. Oh, there is no doubt that they have increased the availability of works, just by virtue of if you have 40 million songs in a library, it is certainly more accessible than if you were to try to find a physical version of those 40 million songs, no question.

Q. Okay.

MR. ELKIN: Thank you, Mr. Israelite. Panel, I have no further questions.

JUDGE BARNETT: Mr. Steinthal, I see you moving around. Are you going to cross-examine this witness?

MR. STEINTHAL: Yes, I will, Your Honor.

We're working with the same binder.

JUDGE BARNETT: Way to go.

CROSS-EXAMINATION

BY MR. STEINTHAL:

Q. Good afternoon, Mr. Israelite.

A. Good afternoon.

JUDGE BARNETT: And are we okay in open session?

MR. STEINTHAL: Open session, yes.

JUDGE BARNETT: Thank you.

BY MR. STEINTHAL:

Q. Now, you have testified that when the parties entered into the 2008 Phonorecords I settlement, they specifically negotiated that it would be non-precedential, correct?

A. I remember language to that effect, yes.

Q. And you said there was a separate settlement agreement that you referred to as a wrapper agreement that contained that part of the agreement?

A. I don't know that I called it a wrapper agreement, but I believe my counsel did. And I know it as a wrapper or a wrap agreement, yes.

Q. And do you contend that the provision on non-precedential effect is separate from the de novo

language in the regulations that Judge Strickler asked you about yesterday, correct?

A. I think it was an extension of that. I think it was the same thing, and I was asked why just the de novo language made it into the regulation versus the full language. And I don't know the answer to that but it was all the same thing.

It was an agreement of the parties that it would be non-precedential. And whatever ended up in the regulation, I guess, was the de novo language.

Q. You don't dispute the fact that there is nothing in the regulations that says anything about non-precedential terms, correct? It says de novo. It doesn't say that the settlement was a non-precedential, correct?

A. I am honestly not that familiar with the regulations to know.

Q. Now, there was a separate settlement agreement among the parties surrounding the Phonorecords II settlement, was there not?

A. Yes.

Q. By the way, have you spoken to your counsel about that agreement embodying the

Phonorecords II settlement since the topic came up this morning?

MR. ZAKARIN: Why isn't that privileged, assuming that it occurred?

MR. STEINTHAL: I don't believe it should have been the subject of discussion since the topic came up this morning.

MR. ZAKARIN: Nobody said that it was, but it is privileged.

JUDGE BARNETT: Sustained.

BY MR. STEINTHAL:

Q. Now, in the settlement agreement that embodied the Phonorecords II settlement, there is no language to the effect that the rates and terms that the parties agreed to were non-precedential or experimental, correct?

A. I think the language in Phonorecords I covered all future proceedings. So there would have been no need to restate it, if I remember it correctly.

Q. Let's -- let's clarify this then, okay? Let's take a look at the actual settlement agreement between the parties that embodied the settlement of the Phonorecords II proceeding. Let's mark this as Impeachment Exhibit -- what number are we up to --

JUDGE BARNETT: 13.

MR. ZAKARIN: Your Honor, I understood this morning that if one of them was going to go in, whether it be 208 or 2012, they should both be going in. And Mr. Steinthal is now putting in 2012. I am happy to have 2008 go in with it as part of it.

MR. STEINTHAL: I have no problem with that.

JUDGE BARNETT: That's fine. Do we have the 2008 agreement available to make the copies to include with this exhibit?

MR. ZAKARIN: I even have copies, which is --

JUDGE BARNETT: Okay.

MR. ZAKARIN: -- highly organized of me.

JUDGE STRICKLER: 2012 was just being offered for impeachment purposes. Counsel now agree it should go in --

MR. STEINTHAL: I am happy to have it go into evidence.

MR. ZAKARIN: I am happy to have them both in.

JUDGE BARNETT: Okay, thank you. I believe, Ms. Whittle, it is 6013?

THE CLERK: That's right.

JUDGE BARNETT: So these two agreements together are Exhibit 6013.

JUDGE FEDER: They are going in as the same exhibit?

JUDGE BARNETT: They are going in as one.

MR. MANCINI: Your Honor, it may be beneficial if we had marked them as separate exhibits.

JUDGE BARNETT: We aim to please. '08 will be 6013. '12 will be 6014.

MR. MANCINI: Thank you, Your Honor.

(Google Exhibit Numbers 6013 and 6014 were marked and received into evidence.)

MR. STEINTHAL: You say '08 is 13?

JUDGE BARNETT: '08 is 13. '12 is 14. I meant to say it in chronological order. '08 is 6013. '12 is 6014.

MR. STEINTHAL: That's what I understood you to say.

THE WITNESS: I am not going to need this for the moment?

BY MR. STEINTHAL:

Q. You can put it aside for now. Can I get a copy of the '08 agreement? Thank you. Is Exhibit 6014 the settlement agreement embodying the

parties' agreement on rates and terms to resolve the Phonorecords II proceeding?

A. That's what this appears to be, yes.

Q. And that's your signature on one of the several pages of signatures which were done in separate configurations, but if you look at page 4 on the third page of the signatures, that's your signature, right?

A. Yes.

Q. Can you point us to any place in this agreement, Mr. Israelite, containing language to the effect that the agreed-upon rates and terms were experimental or non-precedential?

JUDGE STRICKLER: In the 2008 --

MR. STEINTHAL: No, the 2012 agreement, Exhibit 6014.

JUDGE STRICKLER: Thank you.

BY MR. STEINTHAL:

Q. Can you point me to any place in this agreement containing language to the effect that the agreed-upon rates and terms were experimental or non-precedential?

A. I will have to look. I haven't reviewed this document for some time. Let me --

JUDGE BARNETT: Not to muddle the waters

further, but 6014, the copy that I have, has no signatures in the -- on the counterpart pages. The signature is on the smaller of the two agreements, 6013, which I believe is --

MR. STEINTHAL: If that's the case, Your Honor, then it was a mistake. The one I am looking at has signatures on every page.

MR. ZAKARIN: Mine does too. I have signatures on both, actually. Maybe you are looking at the form of motion, which was just an attachment.

MR. STEINTHAL: The Exhibit 6014, to be clear, Your Honor, is a four-page agreement, which has certain attachments to it. The fourth page is reproduced several times with a signature line showing a signature. And then we have the exhibits to the agreement, which include a form of motion to adopt the settlement.

JUDGE STRICKLER: That's what has no signatures?

MR. STEINTHAL: That is what has no signatures, because that's a form of motion. There is a formal motion that was filed thereafter that is signed.

JUDGE BARNETT: Thank you.

BY MR. STEINTHAL:

Q. So perhaps, Mr. Israelite, you have used that opportunity to see whether you could point us anywhere in this agreement to a place that has language to the effect that the agreed-upon rates and terms were experimental or non-precedential?

A. I haven't yet located where the de novo language existed, if it is in this document at all, but that's my recollection from the second Phono II settlement is that there was also the -- that it would not -- that any future rate proceeding would be de novo.

And it was in the first settlement that I recalled that there was specific language that what was agreed to in the first settlement, the Subpart B rates, could never in any future proceeding be used. That was my recollection.

Q. So you don't dispute the fact that there is nothing in Exhibit 6014 that addresses any agreement by the parties that the rates and terms agreed upon were non-precedential or experimental, correct?

A. I do not see any restatement of the language from the first settlement, which obviously carried through in perpetuity, but I do not see that in this agreement.

Q. You say it obviously carried in perpetuity.

A. That's my opinion, yes.

Q. Okay. That's your opinion. We will get to that other agreement in a minute.

Are you familiar with a term that is used by parties in contracts called an integration clause?

A. I think you are stretching the 20 years it has been since I practiced law. I don't recall that phrase.

Q. Take a look at page 3 of the agreement, Exhibit 6014, paragraph 5.5. It states "Entire Agreement: This agreement expresses the entire understanding of the parties concerning the subject matter hereof and supersedes all prior and contemporaneous agreements and undertakings of the parties with respect to the subject matter hereof."

That was part of the agreed-upon contract between the parties, correct?

A. Yes, I see that as the 5.5 language.

JUDGE STRICKLER: I think we understand, and correct me if I am wrong, that the 2012 regulations include de novo language that don't include any further language along the lines that we

have been discussing, correct?

THE WITNESS: I honestly don't -- wasn't involved in the difference between the contractual agreements and any submitted regulation language, but...

JUDGE STRICKLER: What I am trying to get to is do you know if there is anything in the 2012, 6014 in front of you, that makes reference to the de novo provisions?

THE WITNESS: I haven't seen that language in that document, no.

JUDGE STRICKLER: Thank you.

BY MR. STEINTHAL:

Q. So let's take a look at Exhibit 6013 then, which is the 2008 settlement agreement. Let's make sure this is the 2008 agreement.

Is your understanding correct, this is the settlement agreement embodying the rates and terms of the 2008 Phonorecords I proceeding?

A. That's what this appears to be, yes.

Q. And it bears your signature on page 8?

A. Yes.

Q. Let's take a look at paragraph 3. Is this the non-precedential language that you recall the parties agreed upon for purposes of settling the

Phonorecords I case?

A. Let me read this paragraph. Yeah, I believe this is the language I was recalling.

Q. So do I understand it then that the NMPA and the publishers knew how to draft and embody a provision that expressed any agreement between the parties that the terms were non-precedential and experimental, but they knew how to do that in 2008 and they didn't know how to do that in 2012?

A. I don't know how to answer what my attorneys both inside NMPA and outside counsel knew or thought at the time.

Q. Okay.

A. My understanding was that when the agreement was made in 2008, that there was an agreement among the parties that what we were agreeing to would never be used in a future rate proceeding. That was the level of my understanding of what we had agreed to as the parties.

Q. That the 2008 agreement would never be used as a precedent in a future proceeding, correct?

A. Yes, the 2008 agreement.

Q. Thank you. Now, Mr. Israelite, I believe you testified yesterday that the reason Copyright Owners have proposed a per-user royalty, in addition

to introducing a per-play royalty, is because you believe Copyright Owners should be compensated under the Section 115 license, even when a Services's users do not stream Copyright Owners' works at all in a given month, correct?

A. If it is the availability of our songs which causes the economic transaction to happen for the Service, then, yes, I would believe it would be appropriate and fair for the songwriters and publishers to share in that economic activity, even when there is no streaming involved.

Q. So the answer is yes, you believe that even if a user of a service never streams a song in a given month or year, that you should be compensated for the access that the user obtains by paying a subscription fee? That's right, isn't it?

A. Well, I think my answer was attempting to be more careful in that I was specifically saying that if the economic activity for the Service is due to the availability of the music and that's why they are engaged in the economic activity then, yes, I believe that we would be entitled to share in that.

Q. Mr. Israelite, I think my question was capable of a yes-or-no answer. I don't think anybody knows why a consumer does X or Y.

My question simply, whether it is your position that even if a consumer never accesses a song in a given month or a given year, the NMPA or the Copyright Owners should nonetheless be paid, correct?

MR. ZAKARIN: Objection, object to the preface where Mr. Steinthal -- I am returning the favor from before -- announced why consumers do or don't do things, unnecessary to the question.

JUDGE BARNETT: Sustained.

THE WITNESS: I don't think it is a yes-or-no answer because I think the distinction that I am drawing is an important one.

Let me say it a different way. If a consumer is paying a monthly fee to have access to just a music service, and they don't use that music service, but they pay the monthly fee, in that circumstance I do believe the answer would be yes to your question.

There are other circumstances, for example, the situation with Amazon and the Prime membership, you may buy a Prime membership for many reasons, a music service may be one thing available to you, but there may be other reasons why you have entered into the economic transaction.

And in that circumstance, I think it is a different circumstance, which is why I don't feel comfortable giving a blanket yes or no to your question is because I think it is important that I believe our proposal attempts to distinguish the economic transaction and the purpose thereof.

BY MR. STEINTHAL:

Q. Your proposal is for the greater of a certain $1.06 per subscriber or .0015 dollars per stream, correct?

A. I think we use the term "per user" as opposed to "subscriber." And I think even I have made the mistake of interchanging the word, but I believe if you say user and, yes, it is the greater of those two is our proposal.

Q. So let's just make it easy. Let's take the Google Play Music service where the subscriber is paying a subscription fee, a certain amount per month, the copyright owner position, is it not, is that they should be paid the greater of a certain $1.06 per sub or .0015 cents per stream and that the Copyright Owners should be paid even if the subscriber doesn't access one play of music in a given month, correct?

A. Yes, in the Google Play example, that

would be -- my answer would be yes.

Q. Now, under the Section 115 license, however, the owner of a composition has never received payment from on-demand streaming services for access alone during a reporting period in the absence of any stream, correct?

A. I don't believe that's correct.

Q. Well, you are familiar, are you not, with the provisions of the regs whereby the allocation of the actual royalties collected is of a royalty pool which seeks to determine what particular owners are going to collect the royalty, right?

A. I am not familiar with the regulation, but I will try to answer any question you have about it.

Q. Well, let's then take a look at 37 CFR Section 385. I think we need the regs. And this will also enable us, perhaps, to look at the de novo language as well.

JUDGE STRICKLER: Before we get into that, while we have a pause, taking a look at Exhibit 6013, which is the 2008 settlement, which counsel provided us with a copy of that one? I know it came from different counsel.

MR. ZAKARIN: It came from us, Your

Honor.

JUDGE STRICKLER: The document you gave us makes reference to an Exhibit A.

MR. ZAKARIN: A is incomplete. We're looking for the parts of it. Also B was, in fact, the regulations. And so we didn't attach it because the regulations are the regulations, but we're looking for the -- for that attachment. We wanted to put in the agreement itself.

The A is, I think, the same basic motion that you saw in 2012. You have the front page of it only.

JUDGE STRICKLER: Yes. It would be preferable to at least have a complete document.

MR. ZAKARIN: I agree.

JUDGE STRICKLER: And you are representing, and maybe the parties can stipulate in that case with regard to the proposed regulations in the settlement that were attached as an exhibit to the 2008 agreement, in fact, were the same verbatim as the regulations that were ultimately adopted. If you stipulate to that, then we have them right here.

But if you can't stipulate to that, then we should be able to see it so we have a complete document.

MR. ZAKARIN: We will go back and check to see if we have a more complete document. I suspect Mr. Steinthal does have a complete document as well. So if there is any inconsistency. By the way, I would get up, but it is hard to get out of this chair.

JUDGE BARNETT: We're going to fix that table arrangement.

MR. ZAKARIN: I don't think it is the table. There is wires underneath which block my movement a little bit.

JUDGE BARNETT: Well, there is also a very tiny alleyway there. So we will fix that.

MR. ZAKARIN: As a matter of conceit, I like the tiny alleyway, but the rest of it is more troublesome.

JUDGE STRICKLER: So the 6014, Exhibit 6014, the 2012 settlement, it appears as though it is complete, and that came from --

MR. STEINTHAL: That came from us. That's the way it was filed. My recollection is that's the way the motion was filed. And I believe it was adopted substantially identical. I can't say that there weren't --

JUDGE STRICKLER: Well, it may or may not

be. Exhibit A was the motion and that looks to be complete. Exhibit B is a press release, I believe, and that appears to be complete.

MR. STEINTHAL: Right.

JUDGE STRICKLER: Was there an exhibit even that had those?

MR. STEINTHAL: Yeah. We can -- that's not part of that agreement. The motion to adopt attached the regulations.

JUDGE STRICKLER: So it is sort of bootstrapped in as part of the document. So we should get that too or a stipulation that it is identical to what we adopted.

MR. ZAKARIN: I'm sure Mr. Steinthal and I can work that one out, so the Court has complete documents.

BY MR. STEINTHAL:

Q. Mr. Israelite, I was asking you about the way the royalty pool under the statutory license is actually distributed. And if you look at Section 385-12, you will see there is a provision called calculation of royalty payments in general.

A. 385 --

Q. 12.

A. How do I find 12?

Q. It is on page 67943.

JUDGE STRICKLER: Page numbers in the upper right-hand corner.

THE WITNESS: Okay.

BY MR. STEINTHAL:

Q. You will see there is a process whereby, you know, you calculate the greater of the 10 and a half percent of revenue or the lesser of two things, the 80 cents per sub and the TCCI provision, but then there is another process where you allocate the payable royalty pool and it gets distributed based on the actual plays that the Services report? Is this news to you?

A. I'm not familiar with the language in the Federal Register.

Q. Is it news to you as a practical matter that the way the Section 115 Subpart B license works under the existing system is you go through a few steps, and I am going to ask you step-by-step whether you understand it.

Step 1, you calculate the greater of 10 and a half percent of revenue or the lesser of 80 cents per sub or the TCC percentage, right? Are you with me so far?

A. Well, you must be talking only about one

of the five categories of Subpart B then, because the 80 cent number differs --

Q. Let's take the portable subscription service.

A. Okay. So the third category of the Subpart B?

Q. Yes.

A. Okay.

Q. Are you with me now? That's correct. You agree that that's the first step?

A. Is identifying the right category? Yeah, I agree that's the first step.

Q. No. The first step in calculating the fees to be paid, Mr. Israelite, to be fair, is you look at 10 and a half percent of revenue or the lesser of the TCCI payment and the 80 cents per sub and that determines how much the Service has to pay, ultimately subject to a floor payment of 50 cents per subscriber, right?

A. Yes, I believe those are the right numbers from that category.

Q. But isn't it true that the statute has a provision that addresses how the money actually gets allocated to Copyright Owners?

A. Yes. I am not intimately familiar with

the language of it, but I understand as a concept that that process occurs for the payment to be made.

Q. And do you understand that the process is such that the money only goes to the actual Copyright Owners based on actual plays, not based on access, but based on actual plays during the reporting period?

A. Yes, but --

Q. Yes. We don't need a "but."

A. If there are no plays, you would still have a payment due, if there were no plays, but you wouldn't be able to use that formula.

Q. That the Service would make the payment based on the formula, but the Copyright Owner, who would get the benefit of the payment, if that Copyright Owner had no plays, that Copyright Owner would get no payments, right?

A. No, I'm saying if there were no plays at all, they would still have the 50 cent mechanical floor per subscriber, even if there had been zero plays.

Q. I am talking about how the money is distributed.

A. Yes, but there must be plays for that to be -- I'm sorry. Go ahead.

Q. You agree with the proposition that however you calculate the amount of money that gets paid by the Services, it goes into a pool. And the pool is distributed for any reporting period only to those Copyright Owners whose works have been played? Yes or no?

A. No, because philosophically if there had been zero plays for any customer, they would still owe 50 cents per subscriber. And we would be left with a distribution problem of where that money should go but --

Q. Aren't you mixing it up, Mr. Israelite? The 50 cents per sub floor is part of the process to determine what the royalty pool is. Once the royalty pool is determined, only those Copyright Owners whose works have been played get the benefit of that royalty pool. Don't you agree with that proposition?

A. I agree that that is how the royalty is collected.

Q. Thank you.

A. What I am submitting for you is that the way that it is structured, if there were to be no plays, you would still have a royalty pool due and you would have a problem of where to distribute it.

Q. There is really no problem with how to distribute it. It goes only to those persons or corporations who are the owners of the copyrights that have been played. Right?

A. It has never been a problem because there has always been plays, I'm sure.

Q. Mr. Israelite, we're going to be here a long time if we can't get to "yes" on some of these questions.

The pool is determined by the process, which is the greater of, as we talked about, a percentage-of-revenue or the lesser of two variables, subject to a 50 cent per subscriber floor for the portable subscription service, right? You are with me? That's the pool?

A. Yes.

Q. And the pool of money, let's call it 100 units of money, that 100 units of money in a given reporting period only goes to those owners of copyrights that have actually been played? That's the way the statute works, isn't it?

A. Yes.

Q. Thank you.

JUDGE STRICKLER: You mean the way the regulation works?

MR. STEINTHAL: That's the way the regs work, yes.

JUDGE BARNETT: The record should reflect that the publication of amendments to the rules in the Federal Register, to which the -- to which counsel and the witness were just referring is Exhibit 6015 for the record.

MR. STEINTHAL: Thank you.

(Google Exhibit 6015 was marked for identification.)

BY MR. STEINTHAL:

Q. And your proposal in this case has a similar allocation provision, does it not? Once you determine, albeit under your formula, the greater of .0015 cents per-play or $1.06 per subscriber or user, it gets distributed, the pool gets distributed pursuant to this same sort of allocation formula, correct?

A. I understand our proposal to work similar to how the 10 and a half percent versus the 50 cent floor would work to the royalty pool.

Q. Right. So there is no change in the fact that whatever pool is generated, the way your proposal works for any given reporting period, only those Copyright Owners whose works have been played

will actually receive payments, right?

A. I believe that is how it would work, yes.

Q. Okay. And you nonetheless have the view, and I heard you explain it, that from a payment perspective the Services should pay even if a given user makes no use of a service in a given month, the Services should pay the Copyright Owners because of their ability to access the library of music, correct?

A. It is because they are paying because of the music. Because of the ability to access is certainly one way to say it.

Q. And what you are saying is even if somebody doesn't use it, if they are0, you know, stick with Google's service, so we don't have to get confused with Amazon.

Even if a Google subscriber never uses the service, you believe that the Service should pay because you believe the Copyright Owners should be paid for the right to access the music independent of the actual use of the service, right?

A. It is because they are paying Google to be able to use the music. And whether they use it or not, the economic transaction has been to Google's benefit because of the availability of our

songs. We call it the gym member, the gym user, similar to how a person will pay their gym every month, whether they use it or not.

Q. So the answer is yes, you believe that the Copyright Owners should be paid for the benefit of access, right? I mean, you testified as much in your testimony, right?

A. Yes, I am just trying not to get hung up on your phraseology of access, because I believe you are going to try to twist that. I am trying to make sure it is clear that it is because the customer has -- is paying Google for the service.

And whether they use it or not, we believe that the songwriters who write the songs deserve to share in that economic transaction.

Q. I think you have said that several times and the answer could have been shorter, but I'm going to postulate this: Isn't it true, Mr. Israelite, that it is actually the Services that provide the access to these musical works and not the Copyright Owners under the Section 115 compulsory license? Would you agree with that proposition?

A. In the case of the five companies here, they are the ones providing the access directly to

the customer.

Q. So you agree that it is the Services that provide the benefit of access, not the Copyright Owners, under the Section 115 compulsory license?

A. No, I don't agree with that.

Q. I didn't think you would. So let's dig down on that. It is true, is it not, that the Section 115 license is not a blanket license?

A. That's correct.

Q. Rather, licensees under the Section 115 license need to request the statutory license on a work-by-work basis. Correct?

A. No, there are other ways to license but that is one way to do it.

Q. Under the statutory license you are telling me there is a way to do it other than a work-by-work basis?

A. I am saying you can license it without using the statutory process.

Q. That wasn't my question. I asked it under the statutory license. Isn't it true that under the Section 115 statutory license, the licensee has to request and serve a notice of intent work-by-work?

A. If they use the statutory license, yes.

Q. We're here to set fees and terms for the statutory license, aren't we?

A. We are, but those fees and terms are often imported into work-around licensing that goes on for most of the licensing. So that's why I --

Q. The answer is yes, we're here for one purpose, to set rates --

A. If you are going to answer for me, I don't need to sit here.

Q. Well, if you would answer yes, rather than with an additional tag-along, I wouldn't have to follow up.

MR. ZAKARIN: Objection.

JUDGE BARNETT: We don't need to get into this. Can we just ask the questions and get the answers?

MR. STEINTHAL: Yes.

JUDGE BARNETT: Thank you.

BY MR. STEINTHAL:

Q. In fact, as you testified earlier today regarding Exhibit 333, that joint article with Jonathan Potter, you have proposed legislative changes in the form of SIRA that would make the Section 115 compulsory license a blanket license, rather than a work-by-work license, right?

A. It is actually a quilt because we're not proposing a single source for a blanket, but it would be -- you have ability of getting blanket coverage if you were to get license from each of the DAs that existed and designated agent. That's how the SIRA proposal would have worked.

Q. Can we call up Exhibit 333, please. It is already in evidence. You will see in the fourth paragraph it says, "SIRA solves the problems with the existing system by creating a statutory blanket licensing method that will allow digital music services to make a simple filing for all musical works." Do you see that?

A. Yes.

Q. Is that a correct statement?

A. Yes, it is a blanket licensing process. It may be a distinction not important for this process, but in some environments the difference is significant between a single sourced license and multiple agent licenses, which is what was proposed. So I am just trying to be clear.

Q. But under the Section 115 license as it now stands, when it comes to the compulsory license a Service's ability to offer access to one song, 100 songs, or a million songs is entirely contingent on

whether the Service secures access to one song, 100 songs, or a million songs under the compulsory licensing process, correct?

A. It should be.

Q. It is, right?

A. No. There are Services that are offering songs where they have not achieved a license, but --

Q. I'm glad you said that. We're going to come to that subject right now. I know your testimony on that.

But to access 1 million songs under the statutory license, your testimony is that the Service would have to send a million notices of intent in order to access each one of those million songs, correct?

A. If they were using the statutory process, which maybe you assumed in your question but I didn't hear it in your question, if they are using the statutory process, then each song would require a direct license.

Q. And if they don't do it completely and they fail to secure an NOI for any one of the million songs they are trying to offer access to, the Service faces the risk of an infringement claim, correct?

A. If the Service offers access to a song for which it does not have an appropriate license, they are subject potentially to copyright infringement.

Q. And there have been several lawsuits asserting hundreds of millions of dollars in statutory damages under the Copyright Act based precisely on the failure of certain Services to secure proper NOIs under Section 115, correct?

A. I don't know how many. I believe several is accurate, though. I believe there were two purported class actions filed against Spotify and there may have been others as well.

Q. Indeed, the NMPA recently settled claims against Spotify for Spotify's alleged failure to secure mechanical licenses to unmatched compositions, right?

A. Yes, we and Spotify reached an agreement. We never sued them. We reached an agreement to address that concern.

Q. But the NMPA members have brought and settled similar claims, not just against Spotify, right?

A. Lawsuits against interactive streaming companies?

Q. For allegedly unmatched compositions under the Section 115 license, right?

A. I don't -- I am trying to recall a lawsuit we have brought against an interactive streaming company. I don't recall one.

Q. Other than -- but you are familiar with the fact that suits have been brought against Rhapsody, against Spotify, correct?

A. I just mentioned the two that were filed against Spotify.

Q. And you are familiar that there is another lawsuit against Rhapsody?

A. Yes, I recall one against Rhapsody.

Q. Again, for the same issue where there was unmatched content that they made available, even though they tried and failed to find the copyright owner associated with a given mark?

A. I think you are assuming quite a bit into ascribing what the Services did or didn't do. I will let the lawsuits speak for themselves. But if you are asking about NMPA, we have not brought one of those lawsuits.

Q. Now, back to the article.

JUDGE STRICKLER: Excuse me just one second. NMPA hasn't brought a suit. Have members

of NMPA brought the suits?

THE WITNESS: Mostly every music publisher in the country is a member of NMPA. And for those who filed against Spotify, I am trying to remember -- the first lawsuit was brought by a songwriter named David Lowery and the second was by a songwriter named Melissa Ferrick.

And I honestly don't know if they are current members of NMPA but they may be. They are both songwriters that brought those purported class action suits. And I think the suit has been combined, and it hasn't been certified yet as a class, but it has been brought as a potential class, I believe.

JUDGE STRICKLER: Thank you.

BY MR. STEINTHAL:

Q. And you are familiar with the phrase "unmatched," pending and unmatched?

A. I am very familiar with that phrase, yes.

Q. And these lawsuits are about content that has been unmatched but, nonetheless, access to the music has been offered by the Service, correct?

A. I don't want to describe the allegations in these lawsuits because they weren't mine. And there may have been additional allegations in these

lawsuits that I am not familiar with, so I am not comfortable answering the extent of what the allegations were in those suits.

But I certainly will admit that one of the things that I know was of concern was the idea that the Services were offering songs for which they did not have a proper license.

Q. And isn't part of your understanding that in some cases they had sought but failed to finalize an NOI process?

A. I'm sorry, who is --

Q. Isn't it your understanding that some of the services had hired Harry Fox to try to match the publishing ownership to the works that they wished to offer access to?

A. I believe all of the Services use a vendor either that they hire from the outside or that they own from within like Google, that attempts to do the proper licensing. And I believe the suit is about, that the particular Spotify suit is about offering songs for which that process did not produce a license, if I understand at least partially what the allegation is, but it is not our suit. We didn't bring that suit.

Q. Let's go back to Exhibit 333. I read you

a part of the article where you referred to problems with the existing system. Do you recall that? It is the fourth paragraph.

A. Yes.

Q. And later in the middle column, you refer to, I quote, "the risk of costly infringement litigation." Do you see that?

JUDGE STRICKLER: Which paragraph in that second paragraph?

MR. STEINTHAL: It is the second to last paragraph of the middle paragraph.

JUDGE STRICKLER: Second to last full paragraph?

MR. STEINTHAL: Yes, the one that starts "the biggest winner, however, will be music fans." I will read it. "Legitimate digital music providers will dramatically expand the number of songs they offer consumers. New, innovative music services will join the market, no longer daunted by inefficient licensing procedures and the risk of costly infringement litigation."

Do you see that?

A. Yes.

Q. The costly infringement litigation risk, that is the risk borne by the Services, correct?

A. Well, it is costly to bring it as well but, yes, it is referring to the risk of the Services.

Q. And that would be avoided if we had a blanket license, that's part of what SIRA was all about, right?

A. That particular type could be avoided. It wouldn't necessarily, but it could be avoided with the SIRA proposal because of the ability to, again, I use the word quilt, but achieve a blanket result.

Q. Okay. This might be a good time to take our break and move to a different topic.

JUDGE BARNETT: How much more do you have, Mr. Steinthal?

MR. STEINTHAL: I have got at least another half an hour.

JUDGE BARNETT: Okay. We will take our afternoon recess, 15 minutes.

(A recess was taken at 2:31 p.m., after which the hearing resumed at 2:52 p.m.)

JUDGE BARNETT: Please be seated. Mr. Steinthal, are we in closed session or open?

MR. STEINTHAL: Still in open.

JUDGE BARNETT: Thank you.

MR. STEINTHAL: Just to address some of the panel's questions, we're going to mark as an exhibit, I doubt there will be an objection, the actual motion to adopt settlement that was signed and filed in the 2012 Phono II proceeding.

JUDGE STRICKLER: So are we in agreement that we can actually make that part of the 2012 exhibit or that we already have? That would make it a complete exhibit? That was an exhibit within an exhibit, right?

MR. STEINTHAL: Well, I think the -- I don't technically think that's true, Judge. I think that the agreement was before the motion to adopt was filed. So I think it just attached the form of motion that was -- that everybody agreed would be filed.

JUDGE BARNETT: Correct.

MR. STEINTHAL: And then subsequently the motion was filed.

JUDGE BARNETT: So we will mark it. And I think we probably could take an official notice, since it is part of our greater record anyway. Thank you for providing it. It makes it easier. Ms. Whittle, it is --

THE CLERK: 6016.

JUDGE BARNETT: Thank you, 6016. Any objection to that being admitted for purposes of this hearing? 6016 is admitted.

(Google Exhibit Number 6016 was marked and received into evidence.)

BY MR. STEINTHAL:

Q. And just to put a pin in this, Mr. Israelite, the testimony you have given about de novo language having been put in the regs, let me turn your attention to page 18.

A. Of what?

Q. Of -- anybody give the witness --

JUDGE FEDER: 6016?

JUDGE STRICKLER: This is the one.

BY MR. STEINTHAL:

Q. It is actually page 18 of Exhibit A, which is the proposed regs, you will see a reference in Section 385.17. It says effective rates. It says, "in any future proceedings under 17 U.S.C. Section 115(C)(3) C and D, the royalty rates payable for a compulsory license shall be established de novo."

That's the de novo provision you were referring to?

A. I assume that it is. I don't know where

it is in the regulation, but my understanding was it was somewhere in the language, yes.

JUDGE BARNETT: Just for completion, for the sake of completion, it is Subpart C, there is identical language in 385.26.

BY MR. STEINTHAL:

Q. Okay. Mr. Israelite, Mr. Elkin asked you some questions this morning about your view about the rate standards of a willing seller/willing buyer and the 801(b) factors, and I don't want to rehash all of that.

I just want to ask you whether the NMPA has ever tried to conduct a calculation of what the difference would be in the rates that they secure under the willing buy -- that they secure under the 801(b) factors and what they would get if a willing buyer/willing seller standard was applied?

A. I can recall one exercise where we attempted to do a formula that was based on the, I believe it was SDARS I case, where in that case there was some commentary by the Court of the rate differences between the two standards, and that we took that difference and we applied it to our existing revenue stream and made an argument that this shows you an upside potential of a different

rate standard. I recall that.

Q. Yeah. Well, let's actually take a look at an exhibit that you looked at yesterday, which was Copyright Owner Exhibit H-2501, which is the same document Mr. Elkin showed you for the 2016 year.

A. The other book?

Q. But for 2015. It is called 2015 Annual Meeting Industry Revenue Steps. Do we need to go to restricted for this?

MR. ZAKARIN: We probably should. I just want to note that this is so weird, it wasn't for the 2016 year, that page. That page was 2016 meeting. I think it was for the 2015 year.

MR. STEINTHAL: Okay.

JUDGE STRICKLER: What is the exhibit number again?

MR. STEINTHAL: The exhibit number was 2501 in the binder that was given to the witness by Mr. Zakarin.

JUDGE BARNETT: It is the 2016 annual meeting, it is 2502.

MR. STEINTHAL: If it is easier to look at 309 from this morning, that's fine too.

THE WITNESS: It is okay to look at the

one from --
BY MR. STEINTHAL:
Q. Whatever you have in front of you, and anybody in the room who wants to follow, it is either 309 from this morning or 2501 from yesterday.
MR. ZAKARIN: Which meeting, which annual meeting?
JUDGE STRICKLER: What was the 3 number?
MR. STEINTHAL: 309.
JUDGE FEDER: 309, last page.
BY MR. STEINTHAL:
Q. I will try to do this without going into restricted session. Do you have it in front of you, Mr. Israelite?
A. Yes.
Q. Are you looking at the document called 2015 Annual Meeting Industry Revenue Steps?
A. Yes.
Q. Okay. Now, go to step 8. It says, does it not, "calculate value of mechanical revenue using willing buyer/willing seller standard instead of 801(b) standard." Then it says "(13 to 6 ratio)." Right?
A. Yes.
Q. So is this the exercise that the NMPA did

to try to look at how much more they would collect in royalties if they were operating under a willing buyer/willing seller standard rather than the 801(b) standard?

A. Yes, this is what I was remembering of that exercise.

Q. Okay. And, in effect, what you were doing was believing that or setting forth your belief that under a willing buyer/willing seller standard, you would achieve approximately 2.12 times more in royalties under the 801(b) factor -- I'm sorry, under the willing buyer/willing seller than you would under the 801(b) factors, right?

JUDGE STRICKLER: You said 2.12?

MR. STEINTHAL: 2.12 times. There is a multiplier. If you look at step 8, there is a figure which is -- I don't want to say it out loud, unless --

JUDGE STRICKLER: Okay, don't.

MR. STEINTHAL: But there is several hundred million dollar figure. And it is then multiplied by 2.167 to get to a number that is -- are you with me on step 8?

JUDGE STRICKLER: I am. You said 2.12.

THE WITNESS: He was rounding.

MR. STEINTHAL: I was rounding.

JUDGE FEDER: That would round to 2.17.

JUDGE STRICKLER: That was round to 2.17. That was my confusion. I thought I was looking at the wrong page. I wasn't trying to check your math.

THE WITNESS: To Google it is just a rounding error.

BY MR. STEINTHAL:

Q. So let me start over and try to make this clean. It is true, is it not, that what you were doing was multiplying the existing royalty under the 801(b) standards and you multiplied by 2.167 to get to what you thought you would achieve under a willing buyer/willing seller standard, right?

A. I don't think it is fair to say I thought it was what we would achieve, but it was applying the ratio from the SDARS I case, as I recall, that same ratio to our mechanical revenue and coming up with a number that, if you apply that ratio, this is what the number would look like.

Q. But SDARS or no SDARS, what you were trying to do is apply a multiplying factor to what you were receiving for Section 115 royalties under the 801(b) standards and what you think you would be able to obtain under a willing buyer/willing seller

standard, right?

A. Again, I wouldn't say what we would be able to obtain, but it was certainly an exercise to demonstrate the potential upside of the rate standard that we were pursuing in Congress.

Q. And isn't it true that the actual rate proposal that you have made in this proceeding is virtually identical in terms of a per-subscriber minimum as applying the same multiplier to the 50 cents per sub floor under the existing rates?

A. If the math works out that way, that was not how we got to the per user -- again, not per subscriber but per user number. We didn't use a formula based on the 50 cent to that, that I'm aware.

But the 50 cent mechanical-only, we are proposing today $1.06 from the B-3 subcategory.

Q. And you wouldn't dispute the math that it would take a 50 cent per sub minimum or floor for a mechanical rate and multiply it by 2.167, you get very close to $1.06, right?

A. I don't know what the number would be. But, again, that wasn't how we got to the $1.06, but it may end up being that those numbers are close.

JUDGE STRICKLER: How did you get to the

$1.06?

THE WITNESS: The $1.06 per subscriber, as I recall, was based from a range that our experts proposed. And that then I conditioned with my membership as to where they felt they should come out in the proposal. And we ended up somewhere within that range.

JUDGE STRICKLER: Do you know -- so it was based on the range your experts developed?

THE WITNESS: Yes, sir.

JUDGE STRICKLER: Do you know whether your experts utilized the 50 cent subscriber floor and developed their range in that manner, then applying this multiple?

THE WITNESS: I don't recall ever reading or hearing that that's how they did it, but I can't speak for what they did.

JUDGE STRICKLER: Thank you.

BY MR. STEINTHAL:

Q. Now, you take the position in your written testimony that the settlement of the Subpart A proceeding reflects the NMPA's recognition that permanent digital downloads just like physical products -- well, let me back up.

I believe you testified today and in your

written testimony that the reason that you agreed to the Subpart A settlement in this proceeding was because of a recognition that permanent digital downloads in the physical products are a rapidly declining business, is that it?

A. Where in my direct statement are you referring?

Q. In your rebuttal testimony, paragraph 49.

A. Rebuttal 49? Yes.

Q. It is true, is it not, though, that there is still, with each of the digital download business and the physical phonorecords business, it is still more than a 2 billion dollar a year industry for each segment, correct?

A. I won't know about 2016 until we get the data from that calendar year, so I don't know what the total dollar number would be.

Q. But for 2015, you would agree with me that it was at least a 2 billion dollar business on each side?

A. I don't have the numbers. I mean, I will go back and refer to the numbers, but I believe that's -- I'm sorry, say the number again?

Q. More than 2 billion?

A. No, I don't think that's close to the

numbers that we talk about.

Q. Maybe we're confusing terms. Let me show you what we will mark as Impeachment Exhibit 6017, I think.

THE CLERK: Yes.

(Google Exhibit 6017 was marked for identification.)

JUDGE STRICKLER: Before we get to that document, so I don't lose the thread, before when I asked you, Mr. Israelite, whether or not the 50 cent mechanical floor was used, if it was multiplied by the 2.167, you said you didn't know, the experts went through a process and you have no idea whether they actually did that or not because you weren't privy to what they did.

Is that a fair statement?

THE WITNESS: I don't -- I don't know if it wasn't because I wasn't privy to it or whether I just am not aware of what formula they used to propose their ranges, but I don't know how they came about to their ranges.

JUDGE STRICKLER: I just wanted to set it up, because my question is a who question. Who are the experts you are referring to?

THE WITNESS: We retained several

economic experts in this case that worked through our outside counsel. And they brought proposals through my outside counsel that we then considered when we were deliberating as a Board over what our proposal would be.

JUDGE STRICKLER: Are any of those individuals the experts who are testifying on your behalf in this proceeding?

THE WITNESS: I believe so, but --

JUDGE STRICKLER: Do you know which ones?

THE WITNESS: I am trying to recall which experts. I don't recall the names of which expert made which range proposals and which ones are testifying. I'm sorry.

JUDGE STRICKLER: Thank you.

BY MR. STEINTHAL:

Q. So does looking at this document -- you are familiar with RIAA shipment data statistics that come out from time to time?

A. Yes, I am generally familiar that they come out with revenue data like this.

Q. If you turn to the second page under figure 4, you will see that there is a reference to digital download revenues including digital tracks and albums, declining 10 percent to 2.3 billion

dollars for 2015. Do you see that?

A. Yes.

Q. You don't have any basis to dispute that number, do you?

A. I don't have any reason to doubt this number.

Q. And if you look in the next column under figure 5, it says total value of shipments in physical formats was 2 billion, down 10 percent from the prior year.

A. I'm sorry, this is --

Q. Right under figure 5.

A. Right under figure 5, okay.

Q. You don't have any reason to dispute, do you, that in 2015 the physical format sales were 2 billion dollars?

A. For sound recording owners, no.

Q. Okay, I am just asking that. Now -- and your testimony in paragraph 49 of your rebuttal was that, as we just went through, you just basically didn't feel that it was worth in such a declining market to expend resources to litigate over that rate, correct, the Subpart A rate?

A. Yes, I don't believe for the five-year period subject to this CRB that the Subpart A

categories will be economically significant to us.

Q. It's true, is it not, that in the Phonorecords I proceeding, notwithstanding that you recognized that CD sales were diminishing, you argued for an increase in the Subpart A rates, right?

A. Yes, our proposal in Phono I was for an increase in the physical rate and a greater increase in the download rate, if I remember correctly.

Q. And even in a diminishing market, you felt that it was worthwhile to seek an increase in the rate in Phonorecords I for Subpart A activity, correct?

A. Absolutely, yes.

Q. Now, it is fair to say, is it not, that one of the contentions in your testimony is that the current rate structure, meaning from Phonorecords II, was negotiated when the streaming industry was nascent and without information about the business models of the Digital Services?

A. Yes, I believe that in Phonorecords II, we still believed that the streaming models were experimental.

Q. And obviously that's true of what your belief is even during Phonorecords I in 2008, right?

A. Yes.
Q. Now, you have taken the position, have you not, that no one knew what the Streaming Services business models might be?
A. I'm sure I have taken that position, yes.
Q. But just stick with Phono I. By the mid-2000s when the Phonorecords I settlement was being negotiated, there were many existing interactive streaming services, weren't there?
A. None that were economically significant, but there may have been a larger number that were attempting to enter the space.
Q. Well, Mr. Elkin went there a little bit, I am going to go there a little bit more deeply.
You are familiar with the fact that there was a major rate court proceeding in the ASCAP Rate Court between ASCAP and AOL, Yahoo, and RealNetworks during the mid-2000s?
A. I don't recall specifically that rate proceeding, but I have no reason to think there wasn't.
Q. Okay. And it is true, is it not, that it was a matter of public record that what ASCAP was litigating against these companies was how to attribute the revenues associated with multifaceted

Internet companies and portals, how to attribute that revenue to music Copyright Owners, on the one hand, as opposed to the rest of the businesses operated by those portals? You knew that was happening, right?

A. I have no idea what arguments were made in that case. I was not involved in that case.

Q. Let me -- let me ask you to take a look at the decision of Judge Conner in the ASCAP Rate Court proceeding to which I just referred.

MR. ZAKARIN: I think this was brought up yesterday. If the witness has no idea about it, what is the purpose of a decision to -- you can't impeach the witness about something he doesn't know about.

JUDGE BARNETT: I was about ready to ask. Where are we going with this, Mr. Steinthal?

MR. STEINTHAL: Just about the description of the services that is set forth to see whether he remembers that, in fact, there were, with this decision, there were services, interactive music services operating during the very time period preceding Phono I that presented many of the same concerns that he claims no one knew about.

JUDGE STRICKLER: Are you trying to

refresh his recollection?

MR. STEINTHAL: Yes. And we will see whether it is refreshed or not.

JUDGE BARNETT: It can be used for that purpose. Those of you old enough to remember Irving Younger will remember you can refresh recollection with a plate of fettuccine.

MR. ZAKARIN: Irving Younger was my ethics professor.

JUDGE BARNETT: You are lucky.

MR. ZAKARIN: I was lucky, although it was 8:00 in the morning.

JUDGE STRICKLER: How did you enjoy the fettuccine?

MR. ZAKARIN: I do remember the nose being bitten off. That story I recall.

JUDGE BARNETT: And this is Exhibit 6018?

THE CLERK: 6010. It was already marked.

JUDGE BARNETT: Okay, thank you. 6010.

BY MR. STEINTHAL:

Q. You will see in paragraph 125, Mr. Israelite, the description of the AOL Music Now subscription service?

MR. ZAKARIN: Paragraph 125?

BY MR. STEINTHAL:

Q. Paragraph 125 on page 352.
A. Okay.
Q. Does looking at the description of AOL Music Now for one flat monthly fee and AOL Music Now subscribers had unlimited access to streaming on-demand. Does that reflect your recollection at all that in the prior passage here that between 2005 and 2007, AOL was operating that service?
A. It does not, but I -- I was aware there were several Services that were attempting to engage in the activity that we called interactive streaming or limited downloading. As I mentioned before in my testimony, several of them took advantage of the, what we called the RIAA styled 2001 agreement.
Q. And some of them stayed in existence through 2008 and ultimately paid royalties based on whatever the outcome was of the Phonorecords I proceeding, right?
A. I am not aware of who stayed in existence or not. I can tell you that at that time our attitude was that it was just so insignificant that it didn't merit any attention, but I don't recall which companies were in existence and when they stopped being in existence.
Q. Well, you are not disputing, are you,

that each of AOL and Yahoo and RealNetworks operating the Rhapsody service were all operating interactive streaming services during the time period that the Phonorecords I case was being litigated, right?

A. I recall Rhapsody is a party that did that. I have no reason to dispute the other two, but I have no memory of the other two.

Q. And, in fact, you knew that there were -- that there was the contemplation that there would be free non-subscription interactive services at the time of the Phonorecords I case, right?

A. The concept of a free advertising-based service was around during Phono I. And it was something that was accommodated in the settlement, although I don't have a memory whether anyone was actually doing it at the time or whether it was aspirational as a category.

Q. Well, you said yesterday, you described it as a theoretical category, did you not?

A. I don't recall using that word, but I'm telling you now, I don't recall whether anyone was actually operating in the United States with that type of a model, but it was a model that was important to the DiMA side to be included in the

Subpart B category.

Q. You don't dispute that you used the word "theoretical" yesterday? We can go to the transcript.

A. I don't remember using the word "theoretical" but I may have.

Q. Okay. Now -- and it is true, is it not, that even in the testimony you cited this morning from Mr. Sheeran, he specifically raised the issue of non-subscription free services in his testimony.

Let's go to -- I will get the right exhibit number -- excuse me, Your Honors, I had it here a moment ago.

JUDGE STRICKLER: Which binder are we looking for?

MR. STEINTHAL: I think it was in a couple of binders. Here it is. Exhibit 322, the written rebuttal testimony of Dan Sheeran.

BY MR. STEINTHAL:

Q. Paragraph 28. I'm sorry, I am having trouble finding. Oh, I'm sorry, in paragraph 28, you will see that in explaining the proposal, Mr. Sheeran says, and I quote, "The proposed minima also recognized that business models are evolving and that both subscription and non-subscription

offerings may develop over the next five years."

So this is a topic that actually came up from the DiMA witnesses that it was important to have a rate structure that would allow for free ad-supported services, correct?

A. No. Two things. Number 1, I'm not sure at all when he says non-subscription, that he means free ad-supported. I could think of other things he might have meant. I don't know what he meant, but he certainly didn't say free ad-supported.

And, secondly, when he says these offerings may develop over the next five years, that seems to confirm my memory they weren't actively existing at that time.

Q. Well, let's probe your memory. Are you familiar with a service called Lala --

A. No.

Q. -- that ultimately was bought by Apple? You don't remember that at all?

A. I do not.

Q. Let's take a look at what we will mark as Impeachment Exhibit 6018?

THE CLERK: Yes.

(Google Exhibit 6018 was marked for identification.)

JUDGE STRICKLER: While we're awaiting that, you said that you don't necessarily equate non-subscription offerings with ad-supported as being coextensive.

What else do you understand non-subscription offerings to potentially mean?

THE WITNESS: I don't know what he meant, but a bundle could be a non-subscription, for example.

JUDGE STRICKLER: Anything else?

THE WITNESS: That theoretically could be a non-subscription? A locker could be a non-subscription, I suppose. You could purchase it and not be a subscriber to it and own it.

I suppose there are other theoretical models where, for example, you buy a concert ticket and you get access to some music. That to me wouldn't be a subscription model, but something that a service might be interested in doing. I could probably come up with lots of different ideas. I just don't know what he meant by that.

JUDGE STRICKLER: Thank you.

MR. ZAKARIN: Again, with respect to Mr. Steinthal marking an exhibit presumably offered as an impeachment exhibit, the witness has said he

doesn't know what Lala is or hasn't heard of it. I suppose that we will then move to the next alternative of refreshing his recollection, but it is certainly not impeachment.

MR. STEINTHAL: Shall I address it?

JUDGE BARNETT: Yes, please.

MR. STEINTHAL: The witness claims to have been very much involved in the digital music industry and negotiating these arrangements. There are and were Services during the mid-2000s engaged in, among other things, free Internet -- interactive streaming.

And I am trying to see whether looking at an article will refresh his recollection that Lala was one. And the other one is last.fm, which was acquired by CBS.

JUDGE BARNETT: You can -- well, you can't refresh your recollection -- well, yes, you can. You may attempt to refresh a recollection, but he has already said he doesn't have any memory of it.

BY MR. STEINTHAL:

Q. Okay. And is it your testimony that you don't remember the launch of last.fm in the United States after it was acquired by CBS?

A. Are you asking about last.fm or Lala?
Q. I am shifting. I am moving to last.fm.
A. Okay. I don't remember the specific launch, but I have heard that name before. I'm familiar that there was a last.fm.
Q. At least on this one, you do recall the service, right?
A. I do recall a last.fm service.
Q. And it included free interactive streaming, did it not?
A. I don't know what it included.
Q. Would it refresh your recollection to look at an article that reports about what kind of service last.fm is?
A. I don't know. This article seems to conflict with how you described the service for Lala so I am reading --
Q. I'm sorry. You don't need to look at that. The Judge convinced me that it was, there was no point, after you testified that you didn't remember the service. I am just moving aside from that.
A. Okay.
Q. You do remember last.fm. Take a look at what we will mark as Impeachment Exhibit 6018.

A. This was 18, I believe.

THE CLERK: 6019.

(Google Exhibit 6019 was marked for identification.)

BY MR. STEINTHAL:

Q. Does the reporting in this article that last.fm, which was acquired by CBS, that last.fm will now offer on-demand streaming of millions of tracks from all four major labels and a host of Indies for free? Does that refresh your recollection as to what kind of service last.fm was operating in 2008?

A. May I finish reading the article? I'm sorry, your question again?

Q. Does it refresh your recollection that, in fact, last.fm was operating in 2008 offering free interactive streaming?

A. No. I was familiar with the brand. I don't think it ever rose to the level of engaging with what they did, but it doesn't refresh a memory that they were offering ad-supported streaming in January of 2008.

Q. Okay. Now, you did state before that no one knew, as you testified in several places in your written direct and rebuttal testimony, no one knew

what the streaming services' business models might be at the time of the Phonorecords I, correct?

A. Yes, I think in Phonorecords I, there was a great deal of uncertainty as to where the models might go. There was some models that existed and others that I recall, you know, there was an attempt to get ahead of the models, because obviously you are setting rates for a future period, but I think all the parties would admit they didn't know where it was going.

Q. Isn't it true that in Phonorecords I, the Copyright Owners themselves were aware of the fact that subscription music services, particularly those run by big tech companies, might pursue a variety of revenue models, which would have to be addressed in any Copyright Royalty Board proceeding?

A. Oh, the big tech companies from 2008 don't even -- I mean, they are not the same big tech companies that we're dealing with here. I think we knew as early as 2001 that streaming was a model that had to be addressed. And that's why we entered into the RIAA-styled agreement, which we later made available to other digital companies.

We were aware that that model of streaming was coming. But by the time of the

settlement in 2008, there was no economic significance to it. And the type of streaming was something that we certainly weren't clear as to which way it would go. Just the fact that in the settlement, the first category B-1 was a non-portable category, suggests the mind-set at the time that the parties thought that the primary use would be on a computer, not on a phone or other portable device.

It wasn't until the third category, B-3, that we even addressed portability. That shows you just how early this was in the thinking.

Q. I think my question could have been answered yes or no without that kind of long answer. And I really would appreciate so we can finish this. When a question is a yes-or-no question, try to answer it yes or no.

A. If I feel like your questions are answerable that way I will, Mr. Steinthal. When I think that they are not answerable that way, then I will attempt to, to the best of my ability, give an honest answer.

MR. ZAKARIN: If I can, I defer to the Court to either tell the witness what to do or talk to Mr. Steinthal, but I don't think they should be

engaging in their own private dialogue.

JUDGE BARNETT: Let me repeat, let's just cut out the colloquy.

MR. STEINTHAL: I am happy to.

JUDGE BARNETT: And ask the questions and elicit the answers. Answer only the question that is asked, please, Mr. Israelite. I'm sorry.

THE WITNESS: That's all right.

BY MR. STEINTHAL:

Q. Are you denying that there was so much information about how interactive streaming services were part of multimedia companies in the mid-2000s, so much so that the NMPA in its position in the Phonorecords I case sought very carefully to identify the need to parcel out what revenue streams of a multifaceted company should come into the revenue base of any particular rate structure and what would not?

A. Attempting to answer your question yes or no, it is a long question, I think the answer is yes, I am denying that.

Q. Okay. Well, let's take a look at the expert report from your expert in the Phonorecords I case and see if that refreshes your recollection, okay? Can I have the Enders report from Phono I.

MR. ZAKARIN: Is this being offered merely to refresh his recollection?

MR. STEINTHAL: Actually, to impeach his last answer.

MR. ZAKARIN: Okay.

THE CLERK: Marked as 6020.

(Google Exhibit 6020 was marked for identification.)

JUDGE BARNETT: Ms. Whittle, 6020, did we miss 19?

JUDGE FEDER: This was 19, the last.fm.

JUDGE BARNETT: I'm sorry. Go ahead.

BY MR. STEINTHAL:

Q. I would like you to take a look at page 27. First of all, is this a copy of one of the expert reports submitted by the Copyright Owners in the Phono I proceeding?

A. I believe that it is.

Q. Dated November 29, 2006, if you look at the first page, correct?

A. Yes.

MR. STEINTHAL: I would move this exhibit into evidence.

MR. ZAKARIN: I thought it was being offered for impeachment?

JUDGE BARNETT: Likewise.
MR. STEINTHAL: Well, all right.
BY MR. STEINTHAL:
Q. Let me ask you to take a look at page 27. Do you see where your expert states, "subscription-based services pursue a variety of revenue models. The principal objective of companies such as Yahoo is to attract users to its site in order to sell on-line advertising. Music subscription services are important elements in helping to drive users to web portals such as Yahoo and to that extent aggressively price their offerings in order to maximize subscriber numbers."
That's a position that was articulated by the Copyright Owners back in 2006, correct?
A. This appears to be from one of our expert's reports from 2006, yes.
Q. So you were aware of large technology companies that might be motivated to aggressively price music offerings in order to attract users who don't monetize the music services in the manner that you had hoped, correct?
A. I'm sorry, I was finishing the sentence.
Q. You were aware this argument was being made back in 2006, correct?

A. The argument that the Services were underpricing their music service in order to get ancillary benefits?

Q. That and exactly what Ms. Enders says in the paragraph I just read to you.

A. Yes, when she describes on-line advertising, I don't think she is talking about the advertising on the music service, but I think she is commenting on the advertising on the Yahoo, in general.

Q. And the objective, I mean, the argument that any revenue-based license would have to take into consideration that the licensee's principal objective might be to attract users to its site in order to sell on-line advertising or to help drive users to other aspects of the company's business, that's an argument that Ms. Enders made in this very report in 2006, correct?

A. She seems to be making this about Yahoo in particular here, yes.

Q. And that sounds very familiar to some of the arguments you are making today, right, in this proceeding?

A. No, I think it is quite a bit different.

Q. Okay. Now, when you say in paragraph 6

of your rebuttal testimony that at the time of Phonorecords I, no one knew that the company's operating --

A. I'm sorry, paragraph 6?

Q. Of your rebuttal testimony.

A. Okay. Okay.

Q. When you say in paragraph 6 that at the time of Phonorecords I, no one knew that the companies operating interactive music services might include companies with -- and I quote -- "other unrelated businesses, such as digital devices, data collection, and physical non-music product delivery," that's not exactly right, is it? Because at least some of those things were things that Ms. Enders was anticipating in 2006, right?

A. No, I think you read this incorrectly and have twisted the meaning of what I wrote. The paragraph reads, "No one knew who would be operating streaming services or what their business models might be."

And then you -- I think you were tying in the "no one knew" to the later phrase. What is directly written here is no one knew who would be operating streaming services or what their business models might be.

Q. Well, these business models of the nature that Ms. Enders describes, you are saying no one knew in 2006, right?

A. Oh, I think it exactly proves our point. All the companies from Phono I are not the companies we're talking about today, which is exactly why back in Phono I we had no idea which companies might be the ones that dominated this space.

Q. Mr. Israelite, while Yahoo and AOL, for example, are no longer operating interactive music services, they were in 2006, were they not? And they were operating services that, in fact, monetized music subscription services as a small part of their overall business offering, correct?

A. Yes, I believe that for those two companies, the music service was a small part of their overall enterprise.

Q. And one of the positions that the NMPA took in the Phono I proceeding was it was important to make sure that there were accurate attributions of revenue to the music service, notwithstanding that the companies offering them were large, multimedia companies, correct?

A. I don't recall Ms. Enders full report from this period. I am happy to review it again,

but I believe that she was making that argument from the one paragraph that you read on page 27. I am looking at the list of services underneath that. I don't know how much she makes that argument about the others, but --

Q. And Table 9 refers to a whole bunch of services that were respectively or -- well, let me rephrase that.

Table 9 refers to a number of services that would be covered by Subpart B, correct?

A. Well, it describes them as limited downloads or interactive streams, and those would be covered by Subpart B.

Q. So as of 2006, it is clear, is it not, that your expert knew that AOL Music Now, Musicmatch, Rhapsody, Yahoo Music, Zune Marketplace, which I think we identified as Microsoft, Napster, they were all operating services that would be subject to Subpart B; isn't that right?

A. Yes, I have been, I think, clear that there were many companies that were attempting to operate in this space back then.

Q. And you wouldn't deny that you testified in Phono I that one issue that will be critical will be the define properly the revenue base against

which the percent rates would be applied?

A. I don't remember my testimony from Phono I, but I may have said that.

Q. Okay. Let me ask you to take a look at your written statement in Phonorecords I.

A. Is that a new exhibit or one of the ones I have?

THE CLERK: 6021.

JUDGE BARNETT: And the purpose of this, Mr. Steinthal?

MR. STEINTHAL: Excuse me?

JUDGE BARNETT: The purpose of this previously unmarked exhibit?

MR. STEINTHAL: It is an impeachment exhibit.

JUDGE BARNETT: Thank you.

JUDGE STRICKLER: What is the number again?

THE CLERK: 6021.

(Google Exhibit 6021 was marked for identification.)

BY MR. STEINTHAL:

Q. Take a look at paragraph 37, please.

JUDGE STRICKLER: 30 what?

MR. STEINTHAL: 37.

THE WITNESS: Okay.
BY MR. STEINTHAL:
Q. Is it correct that you testified in Phonorecords I that one issue that will be critical will be to define properly the revenue base against which the percent rates would be applied; given the rapidly evolving business models of digital music distribution, music may generate revenue in a number of ways? That was your testimony, was it not?
A. Yes.
Q. And as a consequence you proposed a rate structure not limited to a percentage-of-revenue, correct?
A. In Phono I?
Q. Yes.
A. Yes. We had a proposal that was a tiered proposal of the greater-of formula, greater-of formula of different factors.
Q. And it was precisely because the NMPA was aware of the complicated nature of ascribing revenue to multimedia companies and allocating it to music services that the Copyright Owners expressed concerns about structuring the rates exclusively as a percentage-of-revenue, right?
A. No.

Q. Well, that's one of the reasons, right?
A. That may have been one of the reasons. It wouldn't have been the largest reason.
Q. And as a consequence, you negotiated certain minima to ensure a base level of compensation to the Copyright Owners, whatever level of revenue was generated by the music offerings of a given service, right?
A. I don't believe I thought of them as minima, but they were alternate prongs of a greatest-of formula.
Q. And in your written rebuttal testimony in this case, in paragraph 20 --
A. In this case?
Q. Yes. You talk about Mr. Parness' testimony and you agree with certain aspects of his testimony, do you not?
A. Let me read paragraph 20.
JUDGE STRICKLER: Which paragraph is that again, counsel?
MR. STEINTHAL: Written rebuttal testimony, paragraph 20.
THE WITNESS: Okay.
BY MR. STEINTHAL:
Q. Don't you acknowledge here that the

minima that the NMPA negotiated for in Phonorecords I for the Subpart B rates were, in fact, the consequence of your having foreseen what you refer to as the reality that has come to pass? Do you see that?

A. Yes.

Q. And you were aware at the time of the Phonorecords I of the fact that services were already interested in bundling music services eligible for the Section 115 license with other services and products, right?

A. In Phono I, I believe, yes, of course, that was one of the categories that we settled as part of the Subpart B.

Again, I don't recall how much of the bundling had existed in the marketplace versus was aspirational, but it was clearly a concern of DiMA.

Q. So it was known, it wasn't one of those things that no one knew back in 2006 and 2007, it was known that the Services were interested in bundling, correct?

A. The Services expressed an interest in almost everything. They wanted categories to accommodate basically a wish list of what might happen. I don't think the answer for the bundling

is any different than the other categories.

I don't recall there being bundling happening in the marketplace, but they clearly had an interest in that category or we wouldn't have included it in the settlement.

JUDGE STRICKLER: Mr. Israelite, in Phonorecords I in the final regulations that you said were ultimately adopted, you set forth definitions of service revenue, correct?

THE WITNESS: I believe that's correct, yes.

JUDGE STRICKLER: And that was done in part to be able to sort of corral the revenue in the way that you could agree to?

THE WITNESS: Yes. This was a new concept in mechanical licensing. We had always had penny rates before this. And so the concept of a percent being applied was something new.

And unlike a business deal, where you can make a short-term deal and you can protect yourself better, this was, you know, a statutory new thing. And I think that we attempted to define service revenue in a way that could try to protect us.

JUDGE STRICKLER: And that protection was embodied, again, in the settlement of Phonorecords

II as well, correct?

THE WITNESS: Yes.

JUDGE STRICKLER: Did you propose any further protection in the form of audit rights in the event you wanted to be able to verify that the revenue that was being designated, in fact, included all revenue that was properly attributable under the regulation?

THE WITNESS: I don't recall whether an audit right was something that was negotiated at that time. It is something that is often a topic of tension between licensors and licensees, but I don't recall how much an audit right played into the negotiation of whether it would come up or not.

JUDGE STRICKLER: Was it proposed at all on behalf of the Copyright Owners?

THE WITNESS: It may have been. I just don't recall, Judge.

JUDGE STRICKLER: Thank you.

BY MR. STEINTHAL:

Q. One more thing on the "no one knew" testimony, Mr. Israelite. You take the position, do you not, that at the time of Phonorecords I -- and this is in your, again, written rebuttal testimony, paragraph 6 -- no one knew who would be operating

streaming services, and you go on to say that "it was believed" and you go on "that the record labels might be the entities who would operate these services." Do you see that?

A. Yes.

Q. In reality, by the time of the Phonorecords I settlement, the labels had already exited the interactive music streaming service industry, had they not?

A. My recollection is that their initial foray into that space was unsuccessful and they had exited, but that they were expressing regret about that. And there was some sense that they wanted to reenter, is my memory.

I think they -- but their thinking changes quite a bit, as you know.

Q. But the reality is you knew that the labels were players in the interactive music industry in 2001 when they operated Press Play and MusicNet and you knew that they had exited those ventures by 2004, correct?

A. That's correct.

Q. Okay. And as of the time of Phonorecords I, they had not reentered to take control of any interactive music service, right?

A. Oh, I think that's why I wrote that the record labels might be the entities who would operate those services in the future. I think we didn't know.

Q. Yeah, well, you did know that they had been in and exited. What you didn't know was whether they might get in later, right? Correct?

A. I think that attempts to summarize what I have said.

Q. Yes. And by 2008, it is fair to say, is it not, that the NMPA had foreseen the issue of on-demand subscription services substituting for and displacing purchases of recorded music, right?

A. Sure. The concept that someone would use a legal subscription service instead of purchasing was always a present risk.

Q. And that was a risk that you and the NMPA had spoken about at various times, that on-demand subscription services were cannibalizing the purchase market, correct?

A. I'm sure that was a concern I expressed at the time, yes.

Q. It is something that you knew by 2008, the time of the Phonorecords I settlement? Yes?

A. That I knew that it was cannibalizing?

Q. From a timing perspective, it is something you knew by the time Phonorecords I was settled, right?

A. I believe it was a concern from the inception of the model. It was going to be a different model, and to the same that downloads cannibalized physical sales.

Q. Let me ask you to take a look at Exhibit 334.

A. 334?

Q. Yes.

A. Is that in which book?

Q. Probably was in the initial binder that Mr. Elkin gave you.

A. Oh, okay.

Q. But, if not, we will circulate copies anyway.

A. My trial book jumps from 333 to 335.

JUDGE STRICKLER: Yeah, same here, unless they are out of order.

THE WITNESS: I haven't seen a 334 tab somewhere else. Thank you.

BY MR. STEINTHAL:

Q. Exhibit 334, can you identify this as a joint press release from NMPA/RIAA, DiMA, the NSAI

and SGA issued after an agreement on the Phonorecords I settlement?

A. No, I don't think that's what this is.

Q. Is it an HFA release that includes the joint press release that was issued?

A. Yes, it appears to be a publication put out by HFA, and within it it appears to have language from a press release that was put out by those parties.

MR. ZAKARIN: Can I ask if this is being offered for impeachment or as evidence-in-chief?

MR. STEINTHAL: No, it would be evidence-in-chief.

MR. ZAKARIN: It was not identified yesterday, or I guess it was two nights ago when it would have been identified, but it wasn't identified.

MR. STEINTHAL: I thought it was. I'm sorry.

MR. ZAKARIN: I mean, I don't want to make a big thing of it. It's a document, if you want to put it in, go ahead, but I just note that it is not a document that was identified. It should have been.

I have been taken to the woodshed over

that a couple of times. It felt good to do it once.

JUDGE BARNETT: Thank you. This is marked as Amazon Trial Exhibit 334 and not a secret to anyone. Are you offering it?

MR. STEINTHAL: I am offering it, yes.

JUDGE BARNETT: 334 is admitted.

(Amazon Exhibit Number 334 was marked and received into evidence.)

BY MR. STEINTHAL:

Q. Did you or the NMPA review and approve the text of this joint press release before it was issued?

A. I don't recall doing so for this one, but it would be our standard practice that I would review a press release before it went out.

Q. And there is a reference to the SGA, which is an organization that I don't think has been identified in this proceeding. Can you tell us what the SGA is?

A. The Songwriters Guild of America.

Q. And do you see where you are quoted as saying "this agreement will ensure that songwriters and music publishers continue to thrive in the digital age"?

A. Where are you reading from?

Q. The second page.
A. Okay.
Q. In the third paragraph. You say: "This agreement will ensure that songwriters and music publishers continue to thrive in the digital age. I am grateful for the good faith efforts of everyone involved in the discussions leading to this important announcement."
That was accurate when you issued this release, correct?
A. Yes.
Q. Now, just a couple of questions about the Phonorecords II discussions that led to the final agreement.
I think in response to Mr. Elkin's questions, you acknowledged that Google was present in the negotiations that led to the Subpart B and C settlement, correct?
A. They were definitely a member of DiMA at that time, that I recall.
Q. And I believe you actually testified in response to your counsel's questions that you remember them actively involved on the question of lockers, because they wanted to have free lockers. Do you remember giving that testimony?

A. Yes, I recall that Google had -- I don't recall whether it was expressed to me through DiMA or directly from Google, but I recall that Google had an interest in a particular category during that negotiation.

Q. And when you testified earlier that they were interested in Subpart A, I believe you testified, gave that answer to Mr. Elkin, they weren't a licensee under Subpart A, were they?

A. I don't recall when they started selling downloads under Subpart A, but I thought that that was the category that was of interest to them at that time.

Q. Yeah, but the labels are the ones that pay the digital download royalty, right?

A. Oh, well, that's -- that's -- that's very confusing. Yes, the labels technically are the ones that pay, but they pay from the royalty paid to them from Google.

Q. And so that's why the RIAA has participated in the Subpart A discussions, right, because it is the label representatives that pay royalty, right?

A. No. The labels participate primarily because of the physical configuration, where they

are the actual party who sells and collects the money.

Under the digital download arrangement, to date the labels have served as a pass-through license but that doesn't necessarily need to be so and wouldn't necessarily continue. So the digital companies who sell downloads have often also been primarily interested in the rate for a digital download.

Q. Now, and I think you did acknowledge to Mr. Elkin that even though in your written testimony you testified that none of the five companies that are participating in this proceeding were engaged in interactive streaming at the time of those negotiations, actually each of Apple, Amazon, and Google were directly involved in the discussions either through DiMA or directly at the negotiating table because of their interests, either presently or in the future, in Subpart B and Subpart C activities, correct?

A. No, I don't think that you can ascribe their interest in it being about Subparts B and C. I think it was primarily about Subpart A. The settlement in Phono II was a settlement that rolled forward the A and the B together and created the C.

And you had a dynamic of where all of the DiMA companies were interested in that settlement because they all had some interest in one or more of the categories. But my recollection at the time was that those companies were primarily concerned about the Subpart A rates.

Q. Let me ask you to take a look at your deposition transcript on this issue.

A. Okay. I need to find my deposition.

Q. Page 287.

A. Yes, which exhibit?

JUDGE FEDER: 328.

THE WITNESS: 328. Okay. And, I'm sorry, which page?

BY MR. STEINTHAL:

Q. 287.

A. Okay.

Q. Do you see where on line 22 I say:

"Question: But for our purposes today, it is true they were there, you knew they were there negotiating over Subpart C activities, yes?

"Answer: I believe they were negotiating over both. All the companies, I believe, wanted to be involved in the ultimate resolution of Subparts B and C. It doesn't mean that they all had a business

interest in every one of the ten categories, but naturally, and I understand why they would want to be at the table and involved."

That testimony was accurate as to each of Apple, Amazon, and Google, was it not?

A. Yes, but their interest wasn't necessarily self-interest. It was also at the time I recall an interest about what their competitors would pay.

Q. You gave the testimony that their interest was in Subpart B and C in one of up to ten categories, right, that's what you identified in your deposition?

A. Yes, and I am explaining to you that that interest was not necessarily about what they were paying. That interest also included what their competitors who had different models were paying, as I recall.

Q. Now, you testified this morning one aspect about the negotiations that led to the Subpart B and C settlement in Phonorecords II, that you recall them wanting to have a higher rate for the Subpart 2 -- sorry, for the Phonorecords II settlement than had existed under the Phonorecords I settlement. Do you recall that?

A. Yes.

Q. It is true, is it not, that the NMPA did request an increase in the rates at the beginning of those negotiations?

A. I would think it would be negligent if I hadn't.

Q. Okay.

A. And not just Subpart B, but Subpart A as well.

MR. STEINTHAL: I see that it is getting to be 4:00 o'clock. I am going to -- I'm sure I can finish up within five or ten minutes.

JUDGE BARNETT: We go until 5:00.

MR. STEINTHAL: Okay. I am happy to continue.

JUDGE BARNETT: We are stalwarts. We go until 5:00. So finish as quickly as you can, but don't worry about the clock.

MR. STEINTHAL: Okay.

BY MR. STEINTHAL:

Q. I am not sure if this falls in the category of another document that we didn't designate, I hope we did, Exhibit 336, which is the joint press release issued after the Phono II settlement?

A. My book skips from 35 to 37.

MR. ZAKARIN: It wasn't designated. I will look at it.

JUDGE BARNETT: Thank you.

BY MR. STEINTHAL:

Q. Is this a copy of the joint press release that was issued by the parties after resolution of the Phonorecords II settlement?

A. This appears to be the same language from the HFA document, but embedded in a DiMA announcement of some type.

Q. This was after Phonorecords II, not after Phonorecords I, is it not?

A. I don't see a date on this. But I believe this would be Phono II.

Q. Isn't there a date, date released, April 11, 2012?

JUDGE STRICKLER: Where is the date on the document?

MR. STEINTHAL: It is under the microphone in the middle of the --

THE WITNESS: Under the microphone?

JUDGE STRICKLER: There is a microphone?

MR. STEINTHAL: We may have different copies.

MR. ZAKARIN: Whatever, since Cary Sherman is mentioned in here, I don't see a date on it.

THE WITNESS: I don't either.

JUDGE STRICKLER: It does mention lockers.

THE WITNESS: No, it is clear it is from Phono II but it is not clear the date and it appears to be something that -- it wasn't the actual press release, but it looks to be something put out by DiMA.

MR. STEINTHAL: Okay.

THE WITNESS: And it may embed a press release that we put out.

BY MR. STEINTHAL:

Q. I am just working with a different copy that is the joint press release. I'm sorry. So my bad. We will just move on.

A. Okay.

Q. Just a couple of little things from what you testified about this morning, just to clarify.

You made the point that you don't recall Zahavah Levine being part of any negotiations that led to Phonorecords I; is that right?

A. I don't recall engaging with Ms. Levine

directly, no.

Q. But you do mention in paragraph 5 of your rebuttal testimony that Mr. Michael King from RealNetworks was involved?

A. Paragraph, I'm sorry, 5?

Q. Paragraph 5, yes. Do you see the reference to Michael King --

A. Yes, I do.

Q. -- as being involved. RealNetworks owned Rhapsody, correct?

A. Yes, I believe that's right.

Q. And do you know that Mr. King reported to Ms. Levine while she was at RealNetworks and Rhapsody?

A. I don't know what the organization chart was of RealNetworks.

Q. Okay. And also you made a reference to Bertelsmann acquiring Napster. Bertelsmann didn't acquire Napster, right, they simply made an investment in Napster that led to the lawsuit?

A. I don't recall it being phrased as an investment. I recall they took some control over it, but whether it was -- I don't know the --

Q. You don't really know?

A. The method by which they invested or took

control, no, I do not.

Q. Okay. And do you recall that in that case the Court held that making a work available without some other activity was not an infringement?

A. That case settled before it reached a resolution, so I am not sure what you are referring to.

Q. You don't recall an earlier part of the decision where it was determined that providing access to a song does not implicate a copyright right, unless the user actually accesses the song?

A. No, I don't recall that from any language of that decision.

Q. Now, you testified in response to Mr. Elkin that the process is very simple, I wrote those words down, quote/unquote, to get licensed by SESAC and GMR. Do you remember saying that?

A. I don't remember exactly what I said, but it probably was that to achieve a performance license, it is a simple process.

Q. And you have never negotiated a license with GMR or SESAC, have you?

A. No, I have not.

Q. And are you aware of pending antitrust litigation between the broadcast radio industry and

GMR over GMR's licensing demands and alleged violations of the antitrust laws?

A. I'm familiar that there are two different lawsuits. There was one that was brought by an organization called the RMLC, which stands for the Radio Music Licensing Committee, against GMR.

And I'm aware of an unrelated suit filed by GMR against the RMLC. And I believe both of them have antitrust allegations in them.

Q. And they relate to GMR's licensing activities in the RMLC's efforts to obtain licenses from GMR, right?

A. I don't know the extent of what the allegations are in those suits.

Q. And you are aware, are you not, that there was a prior antitrust litigation between both the local television industry and the broadcast radio industry with SESAC over SESAC's licensing demands and alleged violations of the antitrust laws, right?

A. I'm aware that there were those two suits that settled, yes.

Q. And are you aware that there was just recently a two-week litigated proceeding between SESAC and the RMLC over license terms for broadcast

radio from SESAC?

MR. ZAKARIN: I would just want to observe Mr. Steinthal has already announced that he is a counsel in that case or he is involved in that case and he is wandering into an area where he may be crossing the witness/attorney line.

JUDGE BARNETT: Are you making an objection?

MR. ZAKARIN: I am concerned about a question, yes. I'm concerned about a question by a counsel in a case relative to that case because it does involve the potential of the attorney/witness problem.

MR. STEINTHAL: I am not going there, Your Honor.

JUDGE BARNETT: Okay. Sustained.

MR. STEINTHAL: The simple question, Your Honor, of whether he is aware that getting a license from SESAC has led to both antitrust and rate setting proceedings with SESAC, can I ask him that question?

JUDGE BARNETT: Yes.

THE WITNESS: As I understand -- I think you used the phrase that there was a two-week litigation and I think that's not accurate. I

think, as I understand it, the settlement that was entered into between SESAC and the RMLC provided for an arbitration process to set rates, and that they are engaged in that process now. And that was a mutually-agreed upon process.

BY MR. STEINTHAL:

Q. The prior litigation was an antitrust litigation, correct?

A. The litigation that was brought, I don't know all the allegations. I do know that it was settled and that it led to an agreement upon a process of arbitration, which is what has recently just occurred.

Q. Mr. Israelite, one last thing: There has been a transformation in the music industry since the 1990s for publishers and labels that you have talked about in terms of the effects of technology diminishing mechanical royalties through first piracy, then the disaggregation of the album and the advent of digital streaming, correct?

A. I'm sure I have spoken about all those subjects in the past.

Q. But you have witnessed, have you not, other major shifts in consumer behavior responsive to technological changes in the movie industry after

the introduction of the VCR and DVD technology where the movie industry initially thought it was the death of their business, but in the end the movie industry ultimately benefitted from the very technological changes and consumer behavior shifts which the movie industry initially dreaded, isn't that right?

A. I have used that example, but I, to be clear, I have used it to make the point that when you own property, you have a right to make bad decisions about your own property.

And in the case of the VCR, the motion picture industry was dead wrong about whether those technologies would be good or bad, but that at least they had the benefit of getting to decide for themselves, is how I would use that analogy.

Q. And you have used the analogy to show that an industry that suffers diminished revenues due to technological change can often adjust and create new revenue streams which more than offset what they have lost from the old technology, right?

A. It can, although I don't know the economics of whether it offset it or not, but certainly they thought it would be bad if it became an important revenue source.

MR. STEINTHAL: I have nothing further.

JUDGE BARNETT: Thank you. Although we may be stalwart, we are not invulnerable, so we will take a five-minute break.

(A recess was taken at 4:11 p.m., after which the hearing resumed at 4:22 p.m.)

JUDGE BARNETT: Please be seated.

MR. ASSMUS: We have some brief questioning on behalf of Spotify, Your Honor.

JUDGE BARNETT: Thank you.

CROSS-EXAMINATION

BY MR. ASSMUS:

Q. All right. Good afternoon, Mr. Israelite. Richard Assmus on behalf of Spotify. I have just one topic for you today, hopefully a lighter topic than the rest of the day.

The NMPA is responsible for giving out certain awards to songwriters, correct?

A. Yes.

Q. And yesterday on direct you noted that the NMPA gives out gold and platinum songwriting certifications, correct?

A. Yes.

Q. That's the NMPA's gold and platinum program; is that right?

A. Correct.
Q. And the NMPA has been giving out those awards since 2007, correct?
A. That sounds correct, yes.
Q. And that started after you joined the NMPA?
A. Yes, it was my idea.
Q. It was your idea? So I take it you are familiar with the program?
A. Well, the program, the gold and platinum program, to be clear, is owned by the RIAA. It is a trademarked program. That has been going on for maybe 60 years.
My idea was to expand that program and to allow NMPA to designate gold and platinum awards for writers, since the RIAA's program only honors the artists.
Q. And when you -- you were responsible for launching that program?
A. Yes, I was.
Q. And when you were launching it, did you advise the NMPA's Board of that launch?
A. I'm sure I did.
Q. And what do gold and platinum mean?
A. The RIAA program was a program that

recognized certain metrics of sales, and they have, I believe, they had or have three different types of categories. They had album awards, they had singles awards, and they even had ringtone awards to show you just how wrong we can be sometimes.

And what we were interested in doing is only looking at the singles because there would be so many writers on any one given album, potentially, that we wanted to be able to honor the writer of a single award that was already honored by the RIAA for the recording artist.

Q. And gold means 500,000 level; is that right?

A. Yes, I believe the -- during -- there was a negotiation over our ability to use the trademark. The RIAA wasn't excited about us borrowing this brand because it was a very valuable and high profile brand. And so my initial efforts to get permission were denied.

And --

Q. Let me just interrupt you. All I would like to know is does the gold level mean 500,000?

A. I believe that's what the RIAA measures it as, but they have changed, I know, and that's why I don't know if it is still considered 500,000 or

what their -- exactly how they measure it, but they set the metrics and I believe it used to be sales of 500,000.

And now they have incorporated streaming into the model and so I just don't know if they currently refer to it as 500,000, but I think that's right.

Q. And a songwriter's music award can be exploited as a download or a stream, correct?

A. Yes.

Q. And some songwriters may have more of their songs sold in downloads and others may be more prevalent in streaming?

A. Sure, that could be true.

Q. And the NMPA's version of the gold and platinum program, I think you have testified, counts both streaming and downloads, correct?

A. No, we don't count anything. We're not allowed to. What our program does is that when the RIAA makes a certification, under our agreement, three weeks later, we can certify the writer of that single with the same award, but we're not the ones who count or make the designation itself.

Q. So the RIAA when it is counting those, when it is measuring usage for those awards, it

needs to convert streams to downloads, correct?

A. They have chosen to incorporate streaming into their model some time ago. We had nothing to do with that decision.

Q. But the NMPA does certify songwriters for those awards based on the RIAA metrics, correct?

A. Yes, our agreement is that whatever metric they use, we just get to follow with our own certification, but it is their metric.

Q. And you understand that the RIAA uses a 150-to-1 ratio for streams to downloads, correct?

A. Yes, I believe that when they decided to start incorporating streaming into the model, that they started using 150 streams as an equivalent of a unit for the purpose of their counting.

Q. And that's the basis on which the NMPA is willing to certify these awards to your songwriter members, correct?

A. We have no say. We are happy to certify the writers for whatever the RIAA does in their certification program.

JUDGE STRICKLER: Well, you have the right to just stop doing it; if you disagreed with the 150-to-1 ratio, you could say, forget it, we're not going to continue on in this venture utilizing

the RIAA's formula?

THE WITNESS: Oh, yes, Judge. It is a voluntary program. We choose to do it.

JUDGE STRICKLER: Thank you.

MR. ASSMUS: I have nothing further.

JUDGE FEDER: Mr. Israelite, did that conversion rate factor into your decision to join the -- or essentially piggyback on the RIAA's program one way or the other?

THE WITNESS: When we launched our program, I don't believe at that time they were incorporating streaming. It was just a download -- if you sold a physical single it would count but there were none -- it was just a download model.

When they decided to -- so we had already started our program before they started counting streaming. And when they started incorporating streaming, we obviously voluntarily continued with our follow-on program.

JUDGE FEDER: Thank you.

THE WITNESS: But their, it was explained to me, that their 150 metric wasn't meant to equal a download. It was simply a numeric number they came up with for the purpose of their program.

MR. ASSMUS: I just want to object to the

last answer as beyond the scope of the Judge's question.

JUDGE BARNETT: Sustained.

MR. ASSMUS: Thank you.

JUDGE BARNETT: Anyone else?

MR. ISAKOFF: Pandora has no questions for this witness, Your Honor.

JUDGE BARNETT: Thank you, Mr. Isakoff. Anyone else?

MS. MAZZELLO: No questions for Apple.

JUDGE BARNETT: Thank you. Redirect?

MR. ZAKARIN: I am going to try and be reasonably organized and quick, the key word being "try."

REDIRECT EXAMINATION

BY MR. ZAKARIN:

Q. Just to try to clarify some things, first, Mr. Steinthal took you to, I believe, Exhibit -- I think it is 309, which duplicates, I think, 2500 through 2502, but we will straighten that out.

And actually this may have been a question that came from Judge Strickler, which was in going through the computation of the performance income there and a portion of it being for the

writers and a portion of it being paid to the publishers, looking just first at the performance income, which I think effectively you grossed up to account for the songwriter's share?

A. We grossed it up to account for both the songwriter's share and any commissions that would have been deducted.

Q. And you are aware, are you not, that when we talk about the publisher's share, that doesn't necessarily mean only the publishers who are members, but there are songwriters who have their own publishing company; isn't that correct?

MR. STEINTHAL: It is very direct -- I mean, very leading, you know, for that kind of redirect.

MR. ZAKARIN: It is redirect examination.

JUDGE BARNETT: Overruled.

THE WITNESS: There is a very important distinction between what's known as the publisher's share, which is generally 50 percent, and who gets that money because what is very common is that a songwriter is also a co-publisher with a publisher.

So a typical arrangement would be that of a dollar, that 50 cents would go to the songwriter, and then the writer would be a half co-publisher,

and the writer would, therefore, get another quarter and the publisher would get a quarter, so that it would really be a 75/25 split, even though it is referred to as a 50/50 split between publishing and songwriting.

BY MR. ZAKARIN:

Q. And that takes us to the second part, which was Judge Strickler asked you really how much was paid to the writers, if you could compute that.

And with respect to the mechanicals, that's not being -- your Exhibit, or Exhibit 309 doesn't really back out, if you will, the mechanicals, does it, for the writer's share?

A. No, none of the exhibits analyzing the revenue attempt to divide between what ends up with a songwriter versus what ends up with a publisher. In fact, there would be no way to know that.

Q. And is that because the songwriter agreements vary, some are, you know, where some writers get 50 percent, some writers get 75 percent, and there are administration deals where they may get 20 or 10 percent?

MR. STEINTHAL: You are talking about out of the mechanical?

MR. ZAKARIN: Out of the mechanical, so

that there is a varying percentage depending upon the songwriter agreement with the publisher; isn't that correct?

THE WITNESS: That would be true for all of the categories, but yes for mechanical. And the range can vary, I have seen it vary anywhere between 95 percent to the writer and 5 percent to the publisher, to a 50/50 split would be the range, and it would just depend on the individual circumstance of which writer and which publisher.

JUDGE STRICKLER: And the document was Exhibit 309, was that it?

MR. ZAKARIN: 309.

JUDGE STRICKLER: And that document didn't do that breakdown on an aggregated basis among songwriters?

THE WITNESS: Correct. The document merged the publishing and the writing income into one lump sum.

JUDGE STRICKLER: So when you were answering my question before you were just talking about a performance royalty?

THE WITNESS: I understood that to be your question. If I misunderstood, I'm sorry, but I understood you to ask how much of the performance

money goes to the writer, and that's the one that I answered, it is a 50/50 split, but, again, the writer also may be a publisher as well. That's very common.

JUDGE STRICKLER: I was wondering about your answer and I am glad the questions came back on redirect. So thank you.

BY MR. ZAKARIN:

Q. Looking at Exhibit 306, which I think you also should have in your binder there, there is a couple of things I want to try to do with it, and try to avoid moving around between exhibits. 306 are the sheets of financials. And I will do this or I am going to try to do this without closing the room.

If you turn to the second page, and Mr. Elkin asked you some questions about that and he pointed out that the streaming mechanical income had gone up by 36.9 percent, correct?

A. Yes.

Q. And he noted that the drop in physical and digital were much smaller percentages, even though greater in amount, do you see that?

A. Yes.

Q. And the difference in the percentages is

based upon the difference in the base against which they are applied; isn't that correct?

A. Yes, it is year-to-year from '14 to '15.

Q. But it is also, in terms of the base, the physical and digital income is far greater than the streaming mechanical income?

A. In total dollars, yes.

Q. Okay. And so that a smaller percentage drop results in a higher absolute amount of dollar drop?

A. Correct.

Q. That takes me to Mr. Steinthal's question and that's why you can stay with the same exhibit and not migrate, and he showed you, I believe, if I can locate it, an exhibit which was the RIAA exhibit.

A. Yes.

Q. And I am looking to find it, but, of course -- oh, I have it, surprisingly enough, and it is Exhibit 6017. And in 6017 he was pointing out the record company revenues from physical and digital.

Do you recall that?

A. Yes.

Q. For 2015. And that was a significant --

I think it was several billion dollars, as Mr. Steinthal pointed out to you. Do you recall that?

A. Yes.

Q. But that doesn't correspond to the mechanical income that the publishers and writers or we'll call it the Copyright Owners were receiving from physical and digital; isn't that correct?

A. That's correct. I was confused by the question because he was using the $2 billion number but then when I saw the document I realized he was referring to the sound recording revenue, not the music publishing and songwriting revenue.

Q. And the music publishing for physical and permanent downloads for 2015 appear on Exhibit 306 on the second page and they are a small fraction of that $2 billion number, are they not?

MR. ELKIN: Objection, Your Honor. I know it is redirect but he is not entitled to lead on redirect.

MR. ZAKARIN: Actually you are.

MR. ELKIN: No, you are not.

MR. ZAKARIN: We disagree. And I apologize for the colloquy.

JUDGE BARNETT: Thank you. Apology accepted. I generally allow some leading on

redirect, just to let it happen.

BY MR. ZAKARIN:

Q. Mr. Steinthal also showed you, if I can find it, Exhibit 337, which I think is probably in my volume. Let me turn to it.

And this was a press release -- actually this was not. This was a congressional hearing, correct?

A. Yes, 337 was the transcript of a congressional hearing.

Q. And if you turn to page 9, which was the page that Mr. Steinthal was questioning you about, and looking at the paragraph where he talked about the 25 parties, it says, and this is your statement, I think: "Just a few months ago, 25 parties completed a year-long negotiation over rates for five new categories of music services."

Do you see that?

A. Yes.

Q. And is that consistent with what your recollection is, which is that the year-long negotiation was over the Subpart C services, the five new services in Subpart C?

A. Yes. Those were the five new categories.

Q. Now, you were also questioned by Mr.

Steinthal, really from your deposition, and we will go there if we have to, but there was a discussion about experimental. And he was asking you questions about -- actually it was not Mr. Steinthal, I believe it was actually Mr. Elkin, asked you questions about experimental with respect to if Amazon exited the business. And I apologize which one of you I am confusing with the other.

Do you recall those questions?

A. I do.

Q. Okay. And whether, if Amazon exited the business or Google exited the business, would that make it experimental. Do you recall those questions?

A. I do.

Q. When you were discussing experimental in your statements and in your testimony, did it relate to any individual participant as opposed to the industry?

A. No. I think there were two different things that were being confused by the same word. In my testimony about the state of the industry in Phono I and Phono II, it is very much our belief and was then that the industry was in an experimental phase.

When I was asked in my deposition about if a particular mature company today launched a service and immediately withdrew it, would it be experimental for that company, I believe I answered it would.

But that's because those were different things. And I think there was a word game being played trying to marry the word "experimental" to two different things.

If Google built a car today -- I think they actually do -- the auto industry isn't experimental but it may be experimental for Google. If you go back to the invention of the automobile, automobiles were experimental. And that's how I thought of it.

Q. Let me take you to another question. Mr. Steinthal and you sort of, I think you were talking at cross-purposes and maybe -- I want to try to clarify that.

First of all, and I think the starting questions dealt with that the request for a per-subscriber fee by the Copyright Owners is something different than has existed because you would be paying for access and you were never paid for access.

Do you recall those questions?

A. I do.

Q. Okay. Now, first of all, with respect to a subscription service, they get paid either monthly or annually, correct?

A. That's the model that is common with paid subscription services, yes.

Q. And they get paid regardless of whether a subscriber uses the service or doesn't use the service?

A. Yes.

Q. Okay. And you are not aware of the Services refunding to a subscriber his monthly or her monthly subscription fee if they don't, in fact, stream at all during that month?

A. I'm certain they don't.

Q. Now, you talked about the 50 cent per-subscriber mechanical-only floor, and what you said, if I caught it right, is even if there were zero streams in the universe that month, the 50 cent per-subscriber mechanical floor would still have to be paid. Correct?

A. Yes. That was my point is that while there will always be streams to then attribute the royalty pool, the structure of the Subpart B

settlement itself was consistent with the same concept, which is that a subscriber, whether they stream or not, would owe the 50 cents.

And if no one streamed, all of the subscribers would owe the 50 cents and you would then -- maybe it is a theoretical, you know, a hypothetical that is ridiculous, but you would have to figure out how to distribute that money with no streaming activity.

Q. It would be an allocation problem for the Copyright Owners, but there is still, in effect, a fee paid whether there are streams or not?

A. Yes. In the Subpart B rate structure, the 50 cent per-subscriber mechanical-only minimum kicks in regardless of whether there is streaming.

Q. So the $1.06 in effect per-subscriber, per-user fee is not some world-shaking novel change?

A. I see it as similar to how that 50 cent number works today.

Q. Now, Mr. Steinthal also questioned you about unmatched rights, where they cannot match the composition to the owner. Do you recall that?

A. Yes.

Q. Now, isn't there a procedure -- and I may be testing you on something you don't know, so tell

me if you don't -- isn't there a procedure under Section 115 where the copyright owner is not identified or identifiable?

A. There is a procedure for a licensee to get a license when they cannot locate the copyright owner if they take certain steps, I believe.

Q. And I think the step includes filing an NOI with the Copyright Office, rather than it going to an identified copyright owner?

A. I believe that's correct.

Q. And that is how a service using an NOI properly can avoid liability; isn't that correct?

A. Yes, I understand several of the parties here today currently use that process.

Q. Turn to Exhibit 334, if you would, which I think was the --

A. The handouts?

Q. Yes. 334 was the HFA document that Mr. Steinthal put in and we agreed to it coming in.

A. I have it.

Q. Now, first of all, turn to the second page of that, if you would, and three paragraphs up from the bottom.

A. Okay.

Q. Do you see that? And it refers to Roger

Faxon, who was then the Chairman and CEO of EMI Music Publishing. They were a participant directly in the 2008 proceeding, were they not?

A. Yes, they participated both as a member of NMPA and also as an independently-filed party.

Q. And Mr. Faxon's statement, at least as he is quoted in this document, he says: "We're very pleased that these matters have finally been agreed, and that we have reached an agreement that is good for the songwriters we represent, and good for music consumers. This is a first step to establishing fair rates."

Do you recall Mr. Faxon's statement in that regard?

A. I don't recall his specific statement but I certainly recall his attitude as one of my larger Board members and how he felt about the settlement.

Q. And he felt, according to that, that it was a first step towards getting fair rates?

A. Yes. There were some members of my Board that believed that settling under these terms was not a rate they would have liked but that they agreed that, because it was such a small part of the industry, it was more important to establish a framework in case that these services grew and

became important economically.

Q. Okay. I am going to ask you to turn -- and, again, this goes back to duplicate exhibits -- but if you have the larger volume, or the smaller volume, but if you take the larger volume, Exhibit 319 is your rebuttal statement, whichever one is easier to access. In that book it is 3030, I think.

A. Okay.

Q. And Mr. Steinthal asked you a question, looking at paragraph 5 first, which is the portion that appears on page 3. And he referenced Michael King of RealNetworks being involved.

Do you see that?

A. Yes.

Q. Okay. And you recall dealing with Michael King in connection with the Phono I?

A. I don't recall a lot of interaction with Mr. King. I have come to know him better in later jobs that he had, but I guess I recalled him being involved in Phono I at the time I did this rebuttal paper.

Q. And Mr. Steinthal pointed out to you -- I don't know that you knew it or not -- but pointed out to you at least at some point in time Mr. King

reported to Ms. Levine. Do you recall that?

A. I recall his question. I don't know who, to whom he reported to.

Q. Well, if you turn to paragraph 14 of your rebuttal statement, and it states here: "I understand that Ms. Levine prior to her employment at YouTube was employed at listen.com, which was subsequently purchased by RealNetworks, which was a participant in Phonorecords I via trade organization DiMA. But Ms. Levine admittedly left RealNetworks for YouTube in 2006, two years prior to the Phonorecords I settlement."

Do you recall that statement?

A. I hadn't recalled it until now that I am seeing it, and it certainly explains my memory.

Q. And so if Mr. King reported to Ms. Levine, he wasn't reporting to her between 2006 and 2008 because she was no longer there; isn't that right?

A. Yes.

MR. ZAKARIN: I have no further questions.

JUDGE BARNETT: Thank you, Mr. Zakarin. Anything further? Thank you, Mr. Israelite. You may be excused.

Proof of Delivery

I hereby certify that on Wednesday, October 20, 2021, I provided a true and correct copy of the Volume V.C - Designated Phonorecords III Records and Testimony to the following:

Pandora Media, LLC, represented by Benjamin E. Marks, served via ESERVICE at benjamin.marks@weil.com

Powell, David, represented by David Powell, served via ESERVICE at davidpowell008@yahoo.com

Zisk, Brian, represented by Brian Zisk, served via ESERVICE at brianzisk@gmail.com

Google LLC, represented by Gary R Greenstein, served via ESERVICE at ggreenstein@wsgr.com

Apple Inc., represented by Mary C Mazzello, served via ESERVICE at mary.mazzello@kirkland.com

Joint Record Company Participants, represented by Susan Chertkof, served via ESERVICE at susan.chertkof@riaa.com

Johnson, George, represented by George D Johnson, served via ESERVICE at george@georgejohnson.com

Amazon.com Services LLC, represented by Joshua D Branson, served via ESERVICE at jbranson@kellogghansen.com

Spotify USA Inc., represented by Joseph Wetzel, served via ESERVICE at joe.wetzel@lw.com

Signed: /s/ Benjamin K Semel